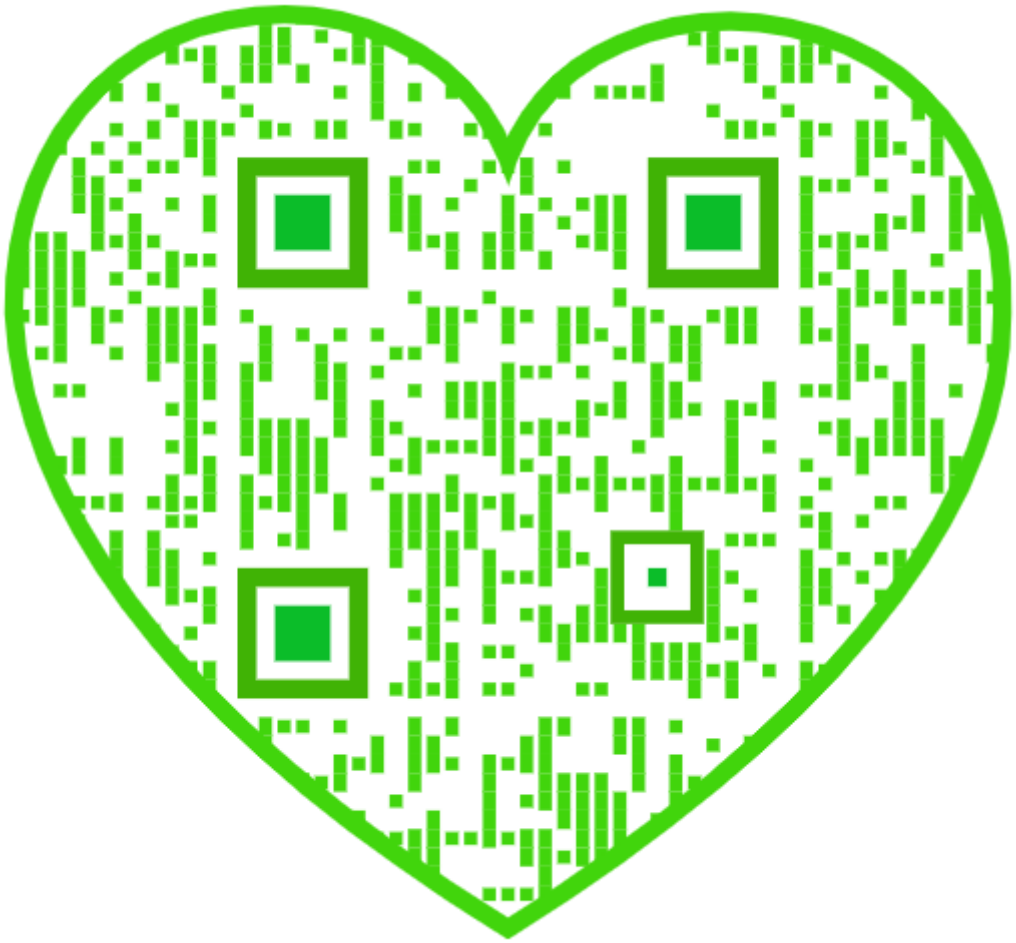
THE PRINTER'S DICTIONARY



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The Printer's Dictionary

of Technical Terms

A Handbook of
Definitions and Information about
Processes of Printing

With a brief Glossary of Terms
used in Book Binding

Compiled by

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Foreword

THE following pages have been in course of preparation for several years. Originally some of the matter was intended solely as "copy" for practice in type-setting by pupils in the School of Printing; later it was arranged, roughly, into the form of a brief glossary, and then, as its value for practice-work, instruction, and general trade information became apparent, it was gradually put into the form in which it now appears.

The book is the product of some seventy-five or eighty young printers, who have left on its pages the impress of their first struggles to attain a mastery of their chosen vocation. Every page represents hours of patient, earnest work on the part of pupils who were receiving their first lessons in putting hastily prepared copy into typographic form. In its compilation no especial researches have been undertaken, reliance being mainly on the ordinary sources of information, *i. e.*, trade journals, technical works, and general dictionaries and encyclopedias, and on personal experience and observation.

Considering the manner in which it has been produced, no apology need be offered for its obvious defects and shortcomings. The aim has been to compile rudimentary information for the young printer, and no attempt has been made to cover the subjects exhaustively or to make a cyclopedia of complete information.

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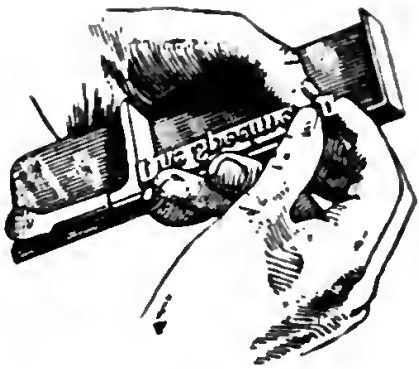


The Compositor's Stick

Methods of Printing

PRINTING is the art, act, or process of producing impressions for literary, graphic, or decorative purposes. This may include many processes which are not commonly associated with the term, like moulding, coining, stamping, embossing, or the methods used in making calico, wall-paper, decorated pottery, etc., as well as in making photographs. The processes here considered are those wherein ink is applied to the surface from which it is intended to print and transferred by impression to paper, cardboard, or other material.

In this sense there are various methods employed, each a separate art, distinct in theory, process, and application. These are known as :

The Relief Method, the chief part of which is typography, or printing from types. This includes also wood blocks and metal plates engraved in high relief, like wood-cuts, zinc etchings, and halftone engravings.

The Intaglio Method, by which the printing is done from polished plates having the lines cut in the surface and filled with ink.

This method includes copperplate and steel-plate engraving, copperplate etching, dry-point engraving, aquatint engraving, mezzo-tint engraving, and photo-gravure.

The Chemical Plane-Surface Method, chief of which is lithography, or printing from stone. This includes also zincography (metal), the several photo-gelatine processes, and the rubber offset process.

The Relief Method

Is that wherein the parts which carry the ink, and thus make the print, stand in relief above the substance out of which they are made, the parts which show white being cut away so that no impression is made on the sheet.

Typography, or letter-press printing, is the method of printing from movable types having letters and other characters cast in high relief. The types are independent of each other, but so made that they may be arranged in endless combinations, and after being once used for one line or page may be separated and re-assembled to print other lines or other pages. Other methods require the engraving or preparation of the subject by slow processes which, when once made upon the printing surface, cannot readily be used for anything else.

A page of type may be composed, corrected, locked up for a press, and impressions made from it in an hour's time or less. This may be done with the simplest mate-

rials, which may be found in every printing house, however small. The page may also be as readily moulded and the mould it makes used to produce a duplicate printing form in one piece. For the great bulk of book printing this duplicate, called an electrotype, is employed. By this method, types sufficient to set up a few pages of this book may be composed, corrected, and the pages moulded, then the type distributed and set again for other pages of the same work, continuing the process for any number of pages. The surface of type forms can also be multiplied by the stereotype process, which is the method now employed for nearly all daily newspapers, as it is the quickest and permits of casting plates in a curved form so that they may be fastened to the cylinders of fast rotary printing machines.

Up to about thirty years ago type-setting was done almost entirely by hand work, but since that time type-casting and type-composing machines have been developed so skillfully that the greater part of straight-away composition on newspaper, periodical, and book work is now done with machines. (See *Type Setting Machine*, p. 324, etc.)

Closely allied to typography in modern practice are wood engraving, zinc etching, and halftone engraving. Engravings of these kinds are in relief, and when made on blocks which bring their surfaces to the height of type they may be put in the same forms with

type, or in separate forms, and printed on an ordinary typographic press.

The wood-cut is the older kind of engraving. Because of its slower manipulation and greater cost it has been almost superseded by the zinc plate and the copper halftone.

Zinc etching is the process of engraving commonly used for newspapers and for the ordinary grades of periodical and commercial work. The copy for reproduction is usually drawn with a pen on white paper or card, with a perfectly black ink, and all the degrees of light and shade must be produced by dots and lines of varying widths and distances apart. Photographs, wash drawings, and fine-grained or tinted pictures must have their essential parts translated into distinct lines and spots in order to be engraved by this method.

Halftone engraving is done practically by the same methods as zinc etching, the difference being that, when photographing the design on the metal, a screen is interposed between a sensitive plate in the camera and the copy. The halftone screen varies in fineness from 80 to 250 lines to an inch, according to the coarseness or fineness of the plate required, this being determined by the finish of the paper to be used and the care with which it may be printed. The coarse screen is best suited for the rapid work and cheaper paper of a daily newspaper, while a screen of 135 to 200 lines, on smooth coated papers

printed on slow presses, gives finer results in the picture. The finer the screen used, the shallower the plate can be etched, and the smoother the paper and finer the ink must be in order to print clearly.

In a wood engraving the lines may be cut sharp and deep, so that it will print clearly on a medium-rough or antique-finish paper. A zinc etching is not usually as deep as a wood-cut and it prints well on a medium-rough paper; if it contains some detail in fine lines it may require smooth paper to show it properly.

Relief printing is done on presses of two distinct classes: the platen, or flat surface, and the cylindrical. The original hand-press consisted of a flat bed upon which the type-form was placed; after being inked and the sheet laid on, the form was subjected to impression by another plane surface. The modern platen press embraces the same principle with the operations applied mechanically instead of by hand labor. The cylinder press is of two classes. One style consists of a flat bed holding the printing form, which passes back and forth beneath a revolving cylinder carrying the sheet and giving the impression. The other consists of two facing cylinders, to one of which a curved printing form is attached; the other, having a smooth surface, imparts the impression to the sheet as it passes between the two cylinders revolving in opposite directions.

This latter style of press is the kind employed for daily newspapers, large-edition periodicals, and advertising matter issued in large quantities. The flat-bed-and-cylinder style of machine is the kind in most common use. It is made in many varieties by different manufacturers, and is the kind upon which the largest part and the best grades of typographic printing is done. The mechanical platen press is used for jobbing and miscellaneous small work, while the hand-press is largely employed for taking proofs of type and engravings, and for work of which only few copies are required.

The Intaglio Method

By this process the design is cut in the surface of the plate, the lines or dots thus engraved being filled with ink, the face of the plate then wiped clean, and the paper, slightly damp, pressed on the plate under the cylinder of a rolling press. By this pressure the paper is forced into the sunken lines and takes up the ink, so that the printing has a slightly embossed or raised appearance. This method is in every respect the reverse of printing from type, and gives results in delicacy of line and brilliance and depth of color not obtainable by other methods. The ink fills the lines in a compact body and does not spread out under pressure; whereas, with type, the pressure of printing from a fine ink-covered line in relief tends to weaken the color and leave blurred edges.

There are several methods of engraving on copper and steel plates, each employed according to the nature of the design. The engraving is done chiefly by hand with sharp tools, or gravers, producing precise lines of varying thickness, as for script lettering. A succession of uniform lines, straight, curved, or waved, are made on a ruling machine, and stippling is done by minute punctures, the dots being larger or smaller, close or open, to give varying tones of color. Another method is to etch the surface with a corroding acid. The plate is covered with a coating through which the design is cut, and the metal afterward eaten away where it is exposed. Because of its greater freedom of manipulation, its quickness, in comparision with the hand-engraving method, and the sketchy nature of etched lines, this latter method is popular with artists, and is employed largely for wall pictures and works of art.

Copper and steel plate printing, being almost entirely hand-work and not easily adaptable to rotary or other mechanical methods, is slow and costly. The kinds of work done are chiefly personal cards, wedding and society cards, announcements, and stationery.

The presses used are not at all like those used for printing type-forms or relief plates. Each print requires the ink to be worked into the engraved lines, the surplus ink cleaned from the face of the plate, the sheet laid on, and the impression taken. The out-

put of a single press is limited to a few hundred copies a day. This method is the same as when it was first invented in the fifteenth century. The tools are the same; the D-roller press is practically the same, perhaps better made; the workman wipes off his plate in the same way. In bank-note printing and a few special lines of work a new machine has been introduced, but a great part of this kind of work is to-day done by the original hand methods.

Steel-plate printing employs practically the same methods as copper-plate work, the engraving being done on a plate of polished steel instead of copper. It is used for bank notes, postage stamps, etc., and was formerly employed for portraits and fine book illustrations, though for this latter purpose half-tones and photo-gravures have largely superseded steel plates, because of the smaller cost.

Steel dies for stamping note paper, envelopes, and similar work, are also manipulated by the same general methods. The steel is soft, so that it can be cut without much difficulty with hand tools. After the engraving is done, the steel is put through a hardening process, and is ready for use. As the design is sunk in the metal, it is necessary to use a counter die to force the paper into the sunken parts to produce the relief and take up the ink. The counter die is made usually of a substance known as tar-board, a piece of which is laid on the steel die and an impres-

sion made. The tar-board is then trimmed away gradually up to the face of the design, so that the impression will be chiefly at the actual point of printing.

The printing is commonly done with a stamping press operated by hand, but there are now several embossing and die-stamping presses in which the operations are automatic and the inking and wiping of the die is done mechanically instead of by hand.

The Plane-Surface Method

Chief under this head is lithographic printing, which is done from flat stones of peculiar quality. The design to be printed is drawn on the stone with a specially-prepared ink, which clings to and dries on the surface. The surface is then subjected to the action of a weak acid that hardens the ink and slightly etches and lowers the unprotected parts. The process of printing first requires moistening the surface with water, which is absorbed by the blank parts and repelled by the hard, greasy lines. Printing ink is then applied and is repelled by the wet parts but adheres to the ink-drawn design. (See p. 140.)

Plates of zinc are sometimes employed as substitutes for the lithographic stones. They are much cheaper, but not adapted to the finer grades of work. Zinc is also used for relief plates by photo-engraving or etching. Work of this kind is known as zincography. Several processes of photo-gelatine printing

are very much like lithography, a coating of gelatine upon a sheet of glass or metal being substituted for the lithographic stone. (See *Gelatine Printing*, p. 87. *Photo-gravure*, p. 187.)

The offset method of printing has recently undergone rapid development, especially in this country. It is one of the many variations of the lithographic principle, employing a plane surface, chemically treated, for holding the design, picture, or other matter to be printed, and a rotary machine with three cylinders for the printing operations. One cylinder carries a zinc plate on which is the design, transferred from an original copy; this cylinder prints on the rubber covering of a second cylinder, which, after receiving the impression, prints, or offsets, it on to the sheet of paper that is carried around by the third, or impression, cylinder. (See *Rubber Offset Press*, p. 254.) Two sets of rollers are used, adjusted beside the cylinder holding the zinc plate. One set of rollers supplies ink to the plate, while the other set dampens it, as in ordinary lithography.

The Printer's Dictionary

The Printer's Dictionary of Technical Terms

Accents—Marks over, under, or through particular letters to show difference in pronunciation, etc. For most roman and italic body letter, and for many jobbing and display fonts, accents are cast on the letter. Separate accents, floating accents, or piece accents, are made for use with any large or heavy-face types.

Acme Paper-Cutter—A machine manufactured in Boston, which has been in use for a number of years and improved from time to time. It is made in several sizes, has self-clamping and other useful devices, and is operated by mechanical power.

Acme Press—A small cylinder press formerly made in Boston and intended mainly to meet the requirements of country newspaper offices. It had a high frame, with the bed about breast-high, ink fountain and rollers close to the printing cylinder, a delivery-fly under the feed-board, and could be operated by a man at the driving wheel. Another press very similar is called the Fairhaven.

Acute Accent—A mark over a letter, thus: é.

Account Mark—A sign used in commercial books and price-current lists : a/c

Ad—A colloquial abbreviation for advertisement. Plural, *ads.*

Adams Press—A printing machine invented by Isaac Adams in 1830, and subsequently improved by him and others. It was in common use for book printing during the latter part of the last century, until superceded by the cylinder machine, and is now used only in a few old-established book-printing houses. It has a stationary platen, and a bed whose only movement is up and down—up to the platen to give the impression, and down to allow the inking rollers to pass over the form. A frisket carries the sheet in to its place and after the impression is made the sheet is then carried out by tapes and deposited on the receiving-board by means of a fly.

Ad-man—The compositor on a newspaper who sets advertisements.

Admiration Mark—Sometimes applied to the exclamation-point, when it indicates surprise, joy, or admiration.

Advertising Rule—A thin brass rule, type high and varying in thickness, for dividing one advertisement from another in newspapers, magazines, etc.

Agate—A small size of type-body, between pearl and nonpareil, corresponding to 5½ points. Chiefly used now in advertising and market reports. Measuring fourteen lines to an inch.

Albatype—A system of making poster type by analyzing the letters, cutting them into squares and circles and then composing them so that they shall come together properly. For instance, an I may be made with four pieces, two for the body and one for each of the serifs; an H would require nine pieces, etc. (*American Dictionary of Printing and Bookmaking.*)

Albertype—A process of reproducing photographs on gelatine, the printing being much like lithography.

Albion Press—An iron hand-press, with frame similar to that of the Washington hand-press, giving its impression by means of levers which straighten out when the bar is pulled. Common in England.

Aldine Editions—Books published from 1494 to 1597 by Aldus Manutius and his family at Venice and Rome, celebrated for their accuracy and the high prices which they commanded. The works of Petrarch, Boccacio and Dante were published by them, and they were the first to use italic letters. The emblem of the Aldi was a dolphin twined around an anchor.

Aldine Type—A heavy-faced roman letter of condensed form: **Aldine.** Now commonly called bold-faced condensed.

Aldus—The popular contraction of the name of Theobaldus Manutius, the head of the celebrated family of Italian printers, who are often styled the Aldi.

Alignment—The exact correspondence at top or bottom of the letters and characters of a font of type.

Alley—The floor space between two stands or cabinets, in which compositors are at work.

All in—When all the type available is distributed in cases.

All in hand—When all the copy has been given out to the compositors.

Alteration of Margins—When a book or pamphlet of small pages has been worked off with small margins for regular edition, and then the furniture between the pages increased to print another edition with wider margins on larger paper, and vice versa.

Ampersand—The name sometimes applied to the character &.

Anastatic Process—A method of reproducing, from anything once printed, another series of impressions. The print is treated with an acid and submitted to pressure against a zinc plate, thus fixing the design on it similar to that of a lithographic plate.

Aniline Colors—A class of newer colors of printing inks, whose basis is coal tar, having great brilliancy but little permanency. They work well and have good covering qualities for little weight, but fade quickly when exposed to strong light.

Annex Box—A brass box or cup which can be attached to boxes of the type case for holding extra or special characters.

Anonymous (or Anon.)—Without name. Applied to books or writings which do not bear the author's name. When an assumed name is used it is termed a *pseudonym*.

Antimony—A metal used in type-founding, in combination with lead, tin, copper, etc.

Antique—A style of type in which all parts of the letter are of a uniform thickness of line, made in many varieties: Antique. The term is also applied to blind-tooling in book finishing.

Appendix—An addition at the end of a book, containing further information; extensive notes, put at the end so that they shall not occupy too much of text pages.

Aquatint—A method of etching on copper or steel, in imitation of drawings in sepia or india ink.

Arabic Numerals—The ten figures in common use, so called because they are supposed to come from Arabia; in distinction from Roman numerals, which are letters.

Arching—When a form, by being locked up too tight, or for some other reason, springs up from the stone.

Army Press—A small press made in Cincinnati, much used in the Civil War, being adapted to the use of movable army printing outfits. It has a cylinder by the rotation of which the bed is moved and the impression given simultaneously.

Artist's Proof—An original proof made before an etching or engraving is given to the public. Incorrectly applied to large paper copies made later.

Artotype—Method of making gelatine plates from photographs, which are printed from in a manner similar to lithography; does not differ much from the albertype.

Ascending Letters—Those that ascend into the upper shoulder of the type, as l, h, d, etc., and capitals; g, y, p, j, q, are descending letters.

Asterisk (*or Star* *)—One of the old-style reference marks. Also used formerly to indicate omitted letters or words. One or more asterisks used in connection with a letter for a name is an *asterism*: B* * * *.

Author's Proof—A clean proof sent to the author after the compositor's errors have been corrected.

Autography—A method of transferring drawings from paper to stone.

Autograph—Written by the hand of the author. An autograph letter or document may have only the signature in the author's handwriting. When written entirely in the author's handwriting it is a *holograph.*

Auxiliary Print—A method whereby part of a newspaper is printed in one place (where the same matter is used for other papers) and then sent to another place to be completed. Used by newspapers with limited facilities. Also called *Ready Print.*

Backing—At press, printing the second side of the sheet; in electrotyping, the process of filling in the copper shell with metal.

Balls—Circular pieces of leather or canvas stuffed with wool or hair and fastened to handles; used before the invention of inking rollers, to distribute ink on the type.

Bank—A high table, with part of the top inclined, upon which the hand-pressman placed his paper. Sometimes applied to any bench with sloping top against a wall.

Bar—In a hand-press, the long handle which is pulled over to give the impression.

Bastard Title—The brief title preceding the main or formal title of a book; the half-title.

Bastard Types—Those with faces larger or smaller than is commonly made on the body, as a 7-point face on a 6-point body, giving the effect of compactness, or 8-point face on 9-point body, giving an open effect.

Batter—Type injured in a form.

Beard (of a type)—That part between the face and the square, solid body; the beveled space below the face of a type.

Bearers—Strips of metal, type high, placed around jobs and pages that are to be electrotyped, and elsewhere, to bear off the impression on light parts of forms. Also used inside the chase in job forms, to insure even rolling of ink over open or irregular matter.

Beating—The ancient custom of putting ink on type by means of inking balls. In bookbinding, to cause folded sheets to lie flat and solid by striking the folded edges with a beating hammer.

Bed—The flat part of a press upon which the form is placed.

Bed-and-Platen Press—That style of press which gives the impression from a flat surface—the hand press, Adams press, and nearly all small job presses; distinctive from the cylinder machine.

Begin Even—When one compositor has part of the copy and must end in the middle of a paragraph but at the end of a line, the compositor having the next part must "begin even."

Bellows—In the composing room, used for blowing out dusty cases, etc.

Benzine—Used very generally in printing offices to clean ink from type. It evaporates quickly and leaves wooden furniture, cuts, etc., uninjured by wetting. Because of the fire risk, only a small quantity is allowed on the premises at one time, and this is kept in patent self-closing cans.

Beveled Sticks—Side-sticks and foot-sticks, of wood or metal, wider at one end than the other, by the side of which wood wedges or quoins are placed to lock up forms. The introduction of mechanical quoins which lock up on parallel side-bearings has made the use of beveled sticks almost unnecessary.

Bibliomania—A passion for acquiring books.

Bibliophile—A lover of books.

Bibliograph—A description of manuscripts and books, with accounts of different editions, date of printing, prices, and other information pertaining to them; the science of books.

Bible Text—Formerly applied to a size of type now called great primer, because it was formerly used for printing the Bible.

Bill-head—A ruled and printed blank on which an account is presented to a debtor. The sizes commonly used are 8½ or 7 inches wide and of varying lengths, the top part having the creditor's name, business, etc., with a blank for the debtor's name, and the date; below these are ruled lines

for the items of the account and prices. A bill-head differs from a statement, which is narrower (usually 5½ inches) and is used for monthly statements.

Bill Posting—To put up bills, posters, etc., on fences, walls, and other prominent places.

Bill of Type—An old-time phrase used to indicate a complete assortment of type cast at one time.

Bind—When a letter, lead, or piece of furniture is slightly out of place, or too large, and does not allow the matter to lock up square and solid. To fasten together and cover the sheets of a pamphlet or book.

Bite—An irregular white spot on the edge of a printed page, caused by a frisket not being sufficiently cut out.

Black-leading—In electrotyping, covering the face of the form which is to be moulded with black lead.

Blacksmith—An opprobrious epithet applied to a poor workman.

Black Letter—Applied to many variations of a style of letter used in the early days of printing: **Black Letter.** Bibliographers call it gothic, because it has always been preferred by people of Gothic descent; but the style called gothic among American printers is an entirely different letter.

Blanks—A general term for white spaces left by quads, leads, slugs, furniture, etc.

Blanket—A woolen cloth or sheet of rubber used on cylinder presses for some kinds of work, to save labor in making ready.

Blank Line—A line of quads in which no letter appears; a white line.

Blank Page—A page on which there is no printing. It is often necessary to make up a page of blank furniture to fill out a form which has other pages of type.

Blank Tables—Tabular work in which the headings and rules have been set, leaving the columns blank, to be filled in later; a method employed to expedite work when the form and size is known and it is desired to finish work in the shortest possible time after arrival of copy.

Blind Date—Letters, figures, or contractions sometimes put at the bottom of advertisements in newspapers to indicate how long the advertisement is to run, or on what days or editions, as a guide to the maker-up: tf, till forbidden, eod, every other day, etc.

Blocks—Hard-wood or metal bases for electrotypes or stereotype plates, usually with catches or mechanical devices for holding the plate in place during printing. A stamp or die used on an embossing press to print book covers.

Block Book—A term applied to the books which were printed from engraved wood blocks about the time of the invention of movable types.

Boards—A term applied generally to any thick, heavy card or pasteboard.

Board Rack—An arrangement of strong boards with ledges on the back and sides, for holding pages and forms of type.

Bodkin—A slender awl, often combined with tweezers, used for correcting in type, etc.

Body—The size of a type considered in the direction from top to bottom of the letter; the thickness, or width sideways, is its *set*.

Body of a Book—The text or subject matter of a book, as distinguished from the preliminary matter, index, appendix, etc.

Bogus—Copy given to compositors on daily papers to fill in waiting time; type set, though not intended for use, is paid for at regular rates, thus keeping piece-hands at work until arrival of genuine copy.

Bold-face—Type of roman style with heavy lines thickened. **Bold-face.** Also called full-face. Fat-face is a broad full-face.

Bond Paper—A strong, flexible paper for bonds, certificates, and commercial forms.

Book Font—A large quantity of type sufficient to set a number of pages of a book, as distinguished from a job font, or small assortment for occasional use.

Book Press—A press adapted for book printing, as distinguished from a newspaper or jobbing press. A strong machine used in binderies to press books together.

Book Paper—The term is applied in a general way to a large class of paper used in books, periodicals, and advertising pamphlets. Other classifications are writing, news, poster, label, cover, etc.

Booklet—A small book or pamphlet.

Book Plate—An electrotype or other plate used in printing books. Also a label, engraved or printed from type, placed inside of a book to show the ownership. See *Ex Libris*.

Book Room—Applied to a composing room in which books are the chief work done, as distinct from a job or news room.

Bookworm—A worm or mite which burrows in the covers and leaves of books. A term applied to a person closely addicted to the study of books.

Border—Applied generally to a large variety of plain and ornamental characters cast in type, the units being adjustable in lines to surround a panel or page, or in other combination to give decorative effects.

Bottom-line—The last line of a page.

Bottom-notes—Foot-notes are sometimes thus called.

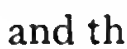
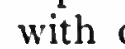
Bourgeois—A size of type between brevier and long primer in the old system of type bodies; in the point system the size is 9-point.

Boxed, or Boxed-in—Small paragraphs or lines of type enclosed with rules or borders; paneled.

Boxes—The subdivisions of a type-case in which the letters are kept.

Boxwood—A wood used extensively for engravings, or wood-cuts. It grows in many parts of the world, and in different varieties, the kind used for engraving being hard and of a fine, close grain.

Box Paper—Paper used for covering boxes, book-covers, etc., made in a variety of colorings and qualities, but thin, so as to be pasted on easily.

Braces—Type characters used to group or combine two or more separate items. They are commonly included with extra characters in fonts of roman capitals, in lengths of two and three ems (), and also in separate parts ( ), which, with dashes, may be extended to any length. They are also made in brass for use in job work ().

Brackets—[ ] Signs of punctuation used to enclose interpolated letters, figures, etc.

Brass—An alloy of zinc and copper much employed in the manufacture of printing material. It is largely used for galleys, column rules, head-rules, plain and fancy rules in a great variety, circles, ovals, dashes, etc.

Brasses—Brass strips used as leads in daily newspaper offices, where hard use quickly destroys the ordinary leads.

Brass Rule Cases—See *Labor-Saving Rule.*

Brass Rule Cutter—A small machine for cutting brass rule in required lengths; a style in common use is adapted for cutting leads and slugs as well.

Brass Rule—Strips of brass of a width equal to type high, of various thicknesses, and many styles of face. It is used in nearly all places where straight lines are required, from a hair line to a heavy black line, and in combination with type and border.

Brass Type—Used by book-binders. Leaden type cannot endure the heat which must frequently be applied for stamping book covers. Brass types are more expensive as well as more durable.

Bray—To distribute ink on an ink-table or disc by means of a brayer.

Brayer—Formerly a wooden pestle of cylindrical shape, flat on one end and with a handle on the other, used to spread out ink to be taken up by the inking balls. Later it became a small hand-roller used for distributing the ink before it is taken up by form rollers.

Brayer Roller—A small hand-roller used to distribute ink, etc.

Break-line—The last line of a paragraph, where quads are required to fill out the space. In careful composition, a break-line which consists of only one short word, or part of a word, is not considered good, except in a narrow column.

Brevier—A size of type between minion and bourgeois, corresponding to 8-point.

Brilliant—A very small size of type, equal to half-minion or 3½-point. It is too small for practical use, although some miniature books have been set in it, which are objects of curiosity. A more practical modern method of obtaining very small lettering is to have the page composed in good type of a large size from which a sharp, clear proof is made, with black ink on white paper; this proof is then reduced to the necessary minuteness by the photographer and an engraving is made by the photo-mechanical process.

Bring Up—In making ready on press, to put underlays or overlays on the parts where the impression is defective; to bring up to an even and full pressure for printing.

Bristol Board—A class of fine cardboard, made in various qualities and thicknesses, usually of smooth finish.

Broadside—A large sheet printed on one side only, like a hand-bill or a poster.

Brochure — A pamphlet; a work containing few leaves, printed and stitched.

Broken Matter—Pi; type matter out of order.

Bronzing—To brush a metallic powder on a sheet freshly printed with ink, varnish, or sizing. The metallic dust is made in gold, silver, copper, green, or other colors, and when applied to a smooth finished surface that has been printed with sizing it gives a brilliant lustre. The printing is done in the usual manner, except that sizing is used for ink, and while it is still fresh on the paper the bronze dust is applied with a soft pad. The surplus dust is brushed off, leaving the printed part bright and clear. When other colors beside bronze are to be printed on the sheet, the bronze form is printed first, in order to get rid of the surplus dust before the other colors are applied. The process is slow and not pleasant when large quantities are printed this way. Bronzing machines have been introduced where there is much of this kind of work.

Bronze Inks—Printing inks made with an addition of bronze; when dry they give a metallic appearance, though not having the same brilliance as when bronze powder is applied to printed sizing.

Bentrovato—A chemical fluid preparation which, applied to the tympan sheet, dispels troublesome electricity in press work.

Buckle—In electrotyping, when the copper shell has folds or lumps in it, making an irregular face.

Building Up—In electrotyping, after an impression of the form has been made in the wax, to put more wax on the places which will show blank in printing, so that these parts in the plate will be deep enough to prevent smutting the paper.

Bullock Press—A web printing machine, the first of that kind made in this country, invented by William Bullock of New York. It embodies the principles of the web perfecting machines now in use by daily newspapers and others — the cylinder upon which is placed the curved stereotype plates, the paper fed to the press from a roll, and the sheets cut apart and run into a folding-machine attachment.

Bundle—Two reams of paper.

Burin—An engraver's tool; a graver.

C—In the Roman numerals, C or c stands for 100. See *Roman Numerals.*

Cabinet—A frame for holding type-cases, etc., closed in on the sides and back so as to exclude dust. Made in many different styles for printers' use.

Caledonian Type—A style resembling antique but heavier: **Caledonian.**

Caledonian Italic—A broad-faced sloping letter: *Caledonian Italic.* More commonly called law italic because of its frequent use in law blanks.

Calendar—A sheet showing the arrangement of days, weeks, and months of the year.

Calender—In paper-making, a machine with rollers between which paper is passed to give a smooth, glossy finish; when the rolling has been frequently repeated the paper is said to be supercalendered.

Calico Printing—The process by which cotton cloth, white or unbleached, is colored that it shows various patterns. The work is wholly unlike that of printing colors in typography.

California Job Case—A type case with boxes arranged like that of the regular italic case, except that, by the omission of two horizontal rows of boxes on the capital side, the boxes for capitals are enlarged.

Caligraphy—The art of writing.

Cameo Plate Paper—A dull-finished coated paper, presenting a delicate surface, for printing halftones, etc.

Campbell Press—A popular cylinder machine invented by Andrew Campbell, and since improved. The different styles of the press embrace nearly every kind required for typographic and lithographic work.

Cancelled Figures—Figures with a line across their faces, used in arithmetic work: 8̸.

Canon—The largest size of type having a distinctive name in the old nomenclature, equivalent to 48-point. It was so called from its early employment in the leading lines or paragraphs of the printed canons of the Church.

Cap—A size of writing paper; flat cap, 14 x 17 inches; double cap, 17 x 28 inches; flat foolscap, or small cap, 13 x 16 inches; crown cap, 15 x 19 inches.

Cap.—A common abbreviation of capital.

Caps. and Small Caps.—Two sizes of capitals made on one size of type body, common in most fonts of roman letter, and often set together in combination: CAPITALS AND SMALL CAPITALS.

Caption—A heading.

Carbon Paper—A sheet covered with black coloring matter, which when placed between white sheets will duplicate on the under sheet any impression made on the top sheet; manifold paper.

Card Cutter—A machine for cutting cards, made in many styles. The style now most used has a board with movable gauges and a blade attached to one edge. At one end of this blade a shear is hinged which, being moved down past the stationary blade, does the cutting.

Card Indicators—Representations of the four suits of playing cards, used in playing-card literature: ♥ ♦ ♣ ♠. See *Playing Cards*.

Card Pips—Fifty-three characters representing each card of a pack of playing cards. They are cast on bodies of about 36-point and used to show plays in card games.

Caret—[∧] A mark used in writing, proof-reading, etc., to denote where a word or other matter is to be inserted.

Case—A shallow wooden tray divided into compartments, in which types are placed for composing. The common size is about 32¼ x 16½ inches, and one inch in depth. Two cases, placed one above the other on an inclined frame, are used for ordinary compositon in roman type. The lower case, divided into fifty-four boxes, contains the small letters of the alphabet, with figures, punctuation marks, spaces, and quads; the upper case, with ninety-eight boxes, holds capitals, small capitals, and miscellaneous characters: $ & ☞ ¶ ‖ § ‡ † * æ œ, etc. Cases adapted to other work than plain roman composition are common in every composing room: for italics, for accented letters, for jobbing and advertising type, for music, for foreign languages, and for numerous other purposes. Many styles of cases have boxes for complete font: capitals, small letters, points, etc., in one case.

Case-cleaner—A device by which a case with a wire bottom, reversed from the ordinary type case, is placed over the latter and turned upside down, allowing the bottom of the type case and its type to be blown free of dust with a bellows.

Case Racks—For holding cases that are not in use, as distinguished from frames or stands for cases in use.

Casing Letter—Putting type into cases when a new font is laid; laying a case.

Caslon Type—An old-style roman, originally designed by William Caslon, an eminent English typefounder. The face is now very popular and used for many kinds of work.

12-Point Caslon Oldstyle *and Italic*

Cassie Paper—The imperfect, damaged outside sheets of a bundle of paper. The term is now rarely used.

Cast—Written at the head of a page or proof by the editor, author, or proofreader, *Cast* signifies that the proof is final and the form is ready for moulding and the plate cast. *O.K.* is the term used in some establishments for the same purpose. When the type form itself is to go on the press for printing, the proofreader's or editor's final proof is usually marked *Press*.

Casting Up—Measuring the amount, by ems, of type set, to find the cost of composition; measuring up.

Casting Off—Estimating the number of pages or columns of type a given amount of copy will make. When the copy submitted is reprint or carefully typewritten, the process of estimating is greatly simplified, but in the case of one hundred or more pages of copy that is in the handwriting of perhaps several persons, on different sizes of paper, broken up into paragraphs and parts, with many breaks and otherwise irregular with extracts, erasures, interlineations, etc., the calculation becomes complicated, and requires a careful examination of the copy, a thorough knowledge of the materials to be employed, and some little experience. The ordinary method employed is, first, to make a careful count or estimate of the number of words or lines in copy; then, having decided upon the size of type and width of page, set a number of lines of the copy sufficient to establish the proportion between lines of copy and lines of type; then the number of type lines is divided into pages of required length. To illustrate: if fifty words of manuscript make five lines of type, and the total number of words in copy is computed at fifteen thousand, the probable total number of lines of type will be fifteen hundred; these lines divided into pages of thirty lines each, will make fifty pages of type. Liberal allowances must also be made for headings,

indentations, paragraph and other short lines, and blanks. These can be estimated only by examining the copy.

Catch-line—Short, unimportant words (the, of, etc.) between large lines in display.

Catch-word—A word placed below the end of the last line of the page in old-time books, to indicate the first word of the next page. The term is now often applied to a large striking or startling first word at the beginning of an advertisement to catch attention; a catch-phrase.

Caxton Black—A style of black letter made and used by William Caxton, the first English printer, and still in vogue in a modernized form: Caxton Black.

Cedilla—A mark under the letter ç, to indicate its pronunciation like s. In the absence of the proper character, some compositors use a modern roman figure 5 upside down: ç.

Celluloid—A white material formed of gun-cotton and camphor. It takes a fine polish, is highly inflammable, and has been used in various ways in printing, but not very generally. When made in sheets like cardboard it may be printed upon, though with difficulty, as its hard, glassy surface resists ordinary printing ink. By the use of heat and by combining some caustic substance with the ink the difficulty is overcome.

Ceriphs, Cerifs, Serifs—Lines or cross-strokes at the ends of the stem of a letter.

Cerography—Engraving on wax spread on a sheet of copper, from which an electrotype is made for printing. The wax process is frequently used in making maps.

Chained Books—The custom of fastening books to reading desks and shelves was common in the Middle Ages and later. In churches, castles and large households books that were highly prized were chained to their places, but could be readily consulted, in the same manner as at the present time directories and other books of reference placed in public places are secured to prevent them being carried off by those who have no right to.

Chalcography—The art of engraving on copper or brass.

Challenge Paper-Cutter—A machine whose cutting power is obtained by turning down an upright lever.

Challenge Press—A small job press of the Gordon style, made in several sizes.

Chandler & Price Press—A popular jobbing machine of the Gordon style, made in several sizes at Cleveland, Ohio.

Chap-Book—A small book or pamphlet carried about for sale by chapmen or hawkers; a *cheap book* for common circulation.

They were of no particular form, but rugged and uncouth, sometimes illustrated with crudest wood-cuts and were popular in the early days of printing. The term has been revived, and is applied to pamphlets of modern make-up but suggesting old-time characteristics.

Chapel—The workmen in a printing office, considered as a society. As used in this country, the term applies to an organization of the union printers employed in a printing house, though in its older usage it meant any assemblage of printers employed in one place. If the printing house is a large one, it has a chapel of the compositors and another of the pressmen; a chapel of the book room, of the job room, or of any distinct department of printers. Each chapel is presided over by a chairman (formerly called the father of the chapel) and, around the imposing-stone usually, deliberates and acts upon matters relating to employment, disputes, chapel dues, and other questions.

Moxon (1683) gives the following explanation of the origin of the term: "Every printing house is, by the custom of time out of mind, called a chapel, and all the workmen that belong to it are members of the chapel, and the oldest freeman is father of the chapel. I suppose the style was originally conferred upon it by the

courtesy of some great churchman, or men (doubtless when chapels were in more veneration than of late years they have been in England) who for the books of divinity that proceeded from a printing house, gave it the reverend title of chapel."

Chapter Heads—Those at the beginning of a chapter, usually sunk from the top line of the full page. The heads on second and succeeding pages are running heads.

Character—A distinctive mark, letter, figure, or sign.

Chart Paper—A machine-made paper, of the best rags, specially adapted for charts and maps, being very strong and thin to fold easily.

Chase—The iron frame in which the type is imposed and locked up for the press, made in many styles for various uses. For small job presses, the chase is a simple cast-iron frame, slightly beveled on two sides, and is made especially to fit its place on the bed of the press. For book and other large work on cylinder presses, stronger chases are made of wrought iron, strongly welded at the corners and having cross-bars fitted in them, to enable the stone-man to lock up large forms with the greatest security possible. The thickness of the chase as it lays around the type-form is a little less than type-high, so that inking rollers may

pass over the face of the form without touching the chase or its accompanying furniture, quoins, etc. Two chases, made to lay side by side on a cylinder press, are half, or twin, chases; a large chase without cross-bar is a broadside or poster chase; a chase to contain two pages of a newspaper has a cross-bar the short way of the chase, to go between the pages; another style is divided into quarters by two cross-bars. The cross-bars may be fixed in the frame, or they may be removable, the ends being dovetailed to fit into slots. When a chase has two sets of slots, allowing the bar to be removed from one place to the other, it has a shifting cross-bar. Chases for cylinder presses have all outer sides without bevels, that they may be locked firmly when placed on the bed of the press. Chases used to lock up forms for electrotype and stereotype moulding are rarely larger than 12 x 16 inches, are extra thick and strong, and are called foundry chases. Daily newspapers printed from stereotypes have special heavy chases, one for each page, and fitted with a wedge-and-screw device for quick locking up.

Check Ends—Ornamental designs placed at the left end of printed bank checks; modern style has largely discarded their use.

Check Folio—A flat writing paper, 17 x 24 ins.

Check Screw—In a hand-press, a screw to regulate the length of the pull.

Checkers and Chess—Types for representing these games are cast on square em bodies, usually 12-point, 18-point, or larger. There are sixty-four pieces for each game, including blanks, which may be composed in a square to represent the playing-board and the characters placed to represent any position or play.

Cheeks—In the old wooden hand-press, the main upright posts into which the other heavy pieces were fastened.

Chesapeake Compound—A prepared reducer for thinning stiff printing inks.

Chill—In a hand-press, an elbow of steel at the end of the bar, which gives the impression by being straightened up when the bar is pulled.

Chinese White—A pigment used for thinning or mixing with colored inks.

Chromatic Type—Type so made that it will print part of a character in one color, then other types inserted to print other colors until the character is complete.

Chromography—Printing with colors.

Chromo-lithography—The lithographic printing process by which one picture is printed from many stones in succesion, each stone printing a different color. The greater part of lithographic printing is of this kind.

Cipher—The tenth character in the list of arabic figures, which, standing by itself, means nothing, but placed after a whole number increases its value tenfold. Also an intermixture of letters, as the initials of a name, an enigmatic device; a private alphabet or system of characters.

Circled Corrections—Special alterations made by proofreader or author are often circled in the proof to call attention to them. See *Ring-mark.*

Circular Quads—Made to justify with rectangular bodies outside but curved inside, in pairs, to hold curved lines of type; very little used now.

Circulars—Applied to a miscellaneous class of small work, like letters, notes, announcements, etc., usually intended to be enclosed in envelopes and circulated by mail.

Circulation Manager—The person who takes charge of the distribution of a newspaper or periodical after it has been printed; the city agent.

Circumflex—The caret-shaped accent placed over a letter: â ê î ô û.

Clarendon—A style of type in which all the lines are thickened, somewhat heavier and more condensed than antique: **Clarendon**. In general use for headings and advertisements.

Clay-finish Paper—Paper in which fine clay is mixed with the pulp, to give it additional lustre and smoothness in the finish.

Clean Proof—When a compositor sets his type without errors, or with very few, he sets a clean proof.

Clearing away—Putting surplus leads, rules, furniture, and other materials back in their places when the make-up and lock-up are completed. The workman who persistently neglects to do this is a nuisance in a composing room.

Clerical Errors—Mistakes made in copying or writing manuscripts.

Clicking—The system of working in companionship under a clicker. See *Companionship*.

Close—The end of a quotation. The copy-holder, reading to the proof-reader, says *quote* (“) at the beginning and *close* (”) at the end of matter enclosed in quote-marks.

Close Matter—Type set solid and with few break-lines.

Close Spacing—Thin spacing, using the three-to-em space and thinner. Type set solid or with thin leads should be close spaced; when widely leaded, wider spacing is required.

Closed Office, or Shop—A workroom in which union workmen only are employed, and which is closed to others.

Closed Up—When work is divided among several compositors and each has completed his part, or take, the matter is closed up. One slower than the others keeps the galley or form open until he finishes.

Coated Paper—That which has a surface coating, giving it a smooth and commonly a glossy finish.

Cock-robin Shop—A small printing office in which a cheap grade of work is done and labor poorly paid for. A London epithet.

Cock-up Letter—An initial letter, larger than the text, justified so that it lines at the bottom and stands up higher than the text letter. HERE is one.

Codex—Before paper was invented wooden tablets were written on, and these tablets were called codices. The ancients wrote first by making notches in them; afterwards they covered them with wax and used a stylus to write with. The word codex thus came to mean writings, a book, a collection of laws, and finally was modernized into code.

Coffin—In a wooden hand-press, the framework into which was laid the stone that served for the bed in old times. Also applied to the framework into which an imposing stone is fitted. A small paper cone used to hold sorts.

Cold Pressing—After sheets are printed they are placed under pressure in a screw press or hydraulic press, to take out the indentations made by type. A method employed in the better grades of books.

Collating—Examining the folded sheets of a book to see that signatures are in proper order. It is a necessity in good work, but slow and tedious. A modern method in large editions is to place a diagonal or other mark in the form so that it will show on the back fold of the signature; the next signature has the mark moved down a little, and so on in regular steps. When the sheets for one book or magazine are gathered correctly, these marks will show in regular order; if irregular, the misplaced sheets may be readily detected.

Colporteur—One who carries around and sells books; in this country applied to a vender of religious books.

Columbian—A size of type equal to two-line brevier or 16-point.

Columbian Press—An iron hand-press invented by George Clymer of Pennsylvania, and very popular during the early part of the the last century. It did good work and was ornamented in a novel manner, being surmounted by a representation of the American eagle "with extended wings and grasping in his talons Jove's thunderbolts,

combined with the olive branch of Peace and cornucopia of Plenty, all handsomely bronzed and gilt." The name is also given to a small rotary job press.

Columbier—A size of writing paper, 23 x 34.

Column—Newspaper columns are separated by column-rules, usually about 6-point in thickness. In periodicals, magazines, and in books which have their pages divided into columns, the modern practice is to separate the columns by a blank space, such as a reglet or slug. A well-defined white space between matter in regular order serves the purpose as well as a light line and is not so bothersome to the pressman; but in the make-up of broken or irregular matter the separating line is necessary to make it legible.

Column-rules—Strips of brass, used mostly in newspapers, to separate columns. They are type-high, and vary from 4-point to 12-point in thickness, with the face beveled on both sides so that the light line is in the middle. A custom with careful workmen is that a plain column-rule should not project above the top line of the columns it divides; but if there is a cross-rule or border at the top of the columns, the column-rule should go up to that cross-rule. A column-rule finished with an ornament may end wherever good taste indicates.

Combination Borders—Those type borders which, by being cast on similar bodies or on multiples of a smaller body, may be combined in various ways to suit the form required; the term applies more especially to a class of elaborate borders made up of many illustrative features, now gone out of favor.

Combination Leads and Slugs—See *Labor-saving Leads and Slugs.*

Come in—When copy is set so that it occupies a designated space it comes in.

Comma (,)—The most frequently used of the punctuation marks. Besides its use in separating the minor clauses of a sentence, it is turned upside down, in pairs and singly, to mark the beginning of a quotation (“); in column matter two are sometimes made to serve as a sign for ditto (“); in large numbers stated in arabic numerals it is used to separate the figures in classes of hundreds (123,456,789); it often indicates the omission of two letters in the name-prefix Mac, as M‘Kay.

Commercial A—The mark @, meaning at or to, used in market reports, etc.

Commercial Signs—Arbitrary marks in use among business men: $ dollar, £ pound sterling, ℔ pound weight, ℔ per, % per cent, a/c account, etc.

Commercial Note—A writing paper, size 8 x 10 inches, folded; commercial letter, 11 x 17 inches, folded.

Comp.—An abbreviation for compositor.

Companionship—When a number of compositors work together under a clicker, who takes charge of the work, gives out copy, finds sorts, makes up, etc. For these services, intended to facilitate the work of others in the companionship, the clicker receives a share of the total amount earned. An English custom, not common here.

Composing—Setting type.

Composing Machines—Many inventions have been made from time to time for setting type mechanically. The most successful machine at the present time is the Simplex, which composes foundry-cast type. Distinction should be made between type-composing and type-casting machines. The Linotype assembles matrices and casts the whole line in a single piece. The Lanston Monotype casts individual types and assembles them into properly-spaced lines.

Composing Room—That part of a printing establishment in which the type is set and imposed and made ready for the press.

Composing Rule—A piece of steel or brass against which type is set in the composing stick; usually with a nib on the end, to take it out when the line is completed.

Composing Stick—The oblong flat tool which the compositor holds to place the types in as he takes them from the case. As its name indicates, it was originally made of wood; wooden sticks are now used for posters, but the common stick is polished steel, sometimes nickeled. It has a movable knee, held in place by thumb-screws or other devices, which enable the compositor to adjust it for setting any length of line within its limits. For newspaper and other work where the length of line is fixed, the adjustable knee is not needed and the stick is made in one piece. A modern style for job compositors is the graduated stick, which has the adjustable knee slotted to the back of the stick in such a manner that it may be set to measures of 6-point and multiples of 6-point without using quads or other materials to fix the measure.

Composition—That part of the work of printing which pertains to type-setting, making up, etc. Arranging the pages in a chase and locking up for the press is *imposition*. The term composition is also applied to the mixture of glue, molasses, etc., used for ink rollers.

Compositor—One who sets type; according to the class of work done, he is termed a book, newspaper, ad, or job compositor.

Compound Words—Two words connected with a hyphen, like arm-chair, house-boat, etc.

Concordance—An alphabetical word index showing the places in the text of a book where each principal word may be found, with its immediate context in each case.

Condensed—The word is applied commonly in printing to designate a type-face thinner than normal, usually connected with the words which name it specifically. This face is normal, **Bold**; this is **Condensed**; this is **Extra Condensed.**

Contents, Table of—One of the preliminary parts of a book which gives a description of text matter, with page references. It differs from the index in that it is at the beginning and follows the order of the book itself, while the index is usually at the end of the volume, gives the subjects in greater detail and is arranged in alphabetical order.

Contraction—A word shortened by the omission of one or more letters, or represented by an arbitrary form. Omitted letters are indicated by inserting an apostrophe; an abbreviation is, more specifically, a word cut off at the end.

Copper-facing—A method of coating by electric action the face of new type, so that it will be more durable.

Copper—Largely used in printing for making electrotypes, for copper-facing type, and in plates for engraving or etching on. Copper is also used in small quantities in the mixture of type metal, and the composition of brass. Copper bronze powder is also used for printing purposes.

Copperplate Paper—A good quality of unsized paper, calendered on one side only.

Copperplate Engraving and Printing—The engraving is done on a plate of polished copper and the impression made on a press with a roller motion. The method is entirely different from typographic work, which is printing from relief surfaces. In copperplate work, the lines are cut in the plate, ink is then rolled over so as to fill the lines; the surplus being wiped off the plate, leaving ink only in the lines, the sheet is placed in position and the whole subjected to a pressure which forces the sheet into the engraved parts. The process is hand-work almost exclusively, and much slower than other methods of printing. Name cards, wedding and society printing, and work of a personal nature requiring relatively few copies, are the kinds done in this manner.

Copper Thin Spaces—Thin pieces of copper, substitutes for paper and cardboard, used in spacing and justifying lines of type in

job-work; made usually for 12-point and larger sizes, which may be obtained of dealers. For easy identification, spaces of ½-point thickness are copper, and 1-point are brass.

Copy — The hand-written, type-written or printed words or design given to the printer. Care taken in the preparation of copy lessens the labor of producing good results. It should be written with ink, not with lead-pencil, on one side of the sheet only; sheets should be of a size convenient to handle, never rolled, and if possible not folded. The term copy is also applied to a single specimen of a finished work.

Copy-cutter — In daily newspaper rooms, the foreman's assistant, whose duty it is to prepare the copy for the compositors. He receives it from the editorial room, marks the size of type for each article, the style of headings, etc., according to the custom of the publication, and cuts the copy into small portions, or takes, so that it may be in the hands of several compositors and put into type in the quickest time.

Copy-holder — One who holds copy and reads it aloud to the proofreader. In large establishments doing book and periodical work, the duties are exacting, as the reading requires, in addition to the speaking of the words, the naming of every point, capital,

italic, accent, or other special character employed in the work. In small printing offices, ordinary matter is often read by a proofreader alone, with the copy beside the proof for comparison. Also, an arrangement placed on the compositor's case to hold copy while setting type.

Copy-hook — Ordinarily a filing-hook beside the copy-desk, upon which copy is placed for compositors in a newspaper office. There is usually a hook for each size of type in use, and copy is placed in regular order, face inward.

Copying Ink — Made both for writing and printing purposes; it will transfer, under pressure, to another sheet that is damp.

Copying Press — A small machine, used in business offices mostly, for making copies of freshly written manuscripts by transferring under an impression. The original copy must be made with copying ink.

Copyright—The legal right which an author, designer, inventor, or proprietor has in his own original productions, especially the exclusive right to print, publish, and sell his literary works, for his own benefit, for a certain period of time. This right may be in maps, charts, photographs, drawings, paintings, musical compositions, statues, and models, as well as in books. The fee for copyright is one dollar.

Cores — The hollow spaces in the bodies of large metal types and in metal bases of stereotypes and electrotypes. Also the center wooden and metal rods of composition inking rollers.

Cornering Machine — For cutting the corners of books and cards, usually round, but may be in different shapes.

Corner Quads — Cast in this shape: ⌝ to match 6-point and 12-point quads. They are useful when placed outside the corners of a page with mitred rule-joints, to secure a true and even junction of rules.

Correcting — In America the term is applied generally to the changing of wrong letters or words, or making other alterations in type forms. In England it may mean the reading and correcting of proof as well, so that the expression *correcting in the metal* is used there to distinguish the mechanical operation from the reading of proof.

Cottrell Presses — Cylinder machines made by C. B. Cottrell and his sons at Westerly, R. I. They are made in various styles for typographic and lithographic work, comprising the ordinary country press, newspaper and job, two-revolution, two-color, stop-cylinder, and the elaborate modern web perfecting shifting-tympan press used by magazines and periodicals of extensive circulation.

Corrector of the Press — A term formerly and now occasionally used for the proof-reader.

Counter — A small mechanism attachable to printing presses to record the number of impressions made. The term is also given to that part of a type which is at the side and within the lines which print, thus giving the white space.

Counting Off Copy—See *Casting Off Copy*.

Country Offices—Commonly understood to be those in towns and small cities, as distinguished from metropolitan establishments.

Country Press — Applied to a style of cylinder press intended for use in small establishments, country printing offices, etc., for ordinary work, and made at small cost.

Cox Printing Presses — A series of web and ordinary cylinder presses made at Battle Creek, Mich. The web presses are of the duplex style, which prints two sides and delivers folded sheets, using ordinary type forms on a flat bed and printing on paper from a roll, or web. Another style prints from curved stereotype plates; others are of the stop-cylinder flat-bed style, and a front-delivery country press.

Cranston Presses — A series of flat-bed cylinder machines made by J. H. Cranston at Norwich, Conn. They were designed for general commercial, book and newspaper work, and were made in a variety of sizes.

Cream Laid— A cream-tinted paper having water-marked lines running through it at regular intervals. In *cream wove* paper these lines do not appear.

Crochet Type— Small types, usually two characters on 6-point em bodies, one character showing a black square and the other a white square. They are set to show patterns of crochet work and other designs.

Cropped— When a book is trimmed too much in binding it is said to be cropped. When it is cut down so that the printing shows in the edges it is said to *bleed*.

Cross-bars— The bars which divide the chase into sections to more securely lock up large forms. When an oblong chase has two cross-bars crossing each other, one is the long cross and the other is the short cross. See *Chases*.

Crown— A size of printing paper, in England being 20 x 15 inches; but in this country the size is usually 19 x 15 inches.

Cryptography— The art or act of writing in secret characters, as by the substitution of one letter for another, so that it will look unintelligible to one not familiar with the key; communications in cipher.

Cunabula or *Incunabula*— The originals; the extant copies of the first or earliest printed books, generally applied to those printed in the fifteenth century.

Curly ñ — An easy way to designate this character. See *Tilde.*

Curvilinear Plates — The stereotype or electrotype plates curved or cast for use on cylindrical machines.

Cut Edges — A book trimmed by a machine has cut edges; if opened by a knife or folder where the folds occur it is untrimmed, which means uncut.

Cut Flush — When the cover on a book, pamphlet, or other work, is trimmed at one cut, with the inside, so that all edges are flush.

Cut Form — A printing form which contains engravings, in distinction from a form of type-matter only. In shop parlance an engraving is a *cut.*

Cut-in Letter — A large letter set in at the beginning of a chapter; an initial letter.

Cut-in note — A note or title set into the side of a page of reading matter; it is usually of smaller size type than the main page, but is sometimes in bolder face. A side-note is placed in the margin outside of the main page.

Cutting-out Knife — Used by pressmen for cutting out underlays and overlays in making ready.

Cutting the Frisket — In hand-press work, to cut out of the frisket the parts to be printed on the sheet.

Cyclostyle — An apparatus for making duplicate copies of writing. Punctures are made in the matrix by points on a small wheel, and through these points color is forced as on a stencil, but with a roller instead of a brush.

Cylinder Press — That style of printing machine which prints by means of a rolling impression against the type form or printing surface. It is made in many varieties, which are known as drum-cylinder, two-revolution, stop-cylinder, double-cylinder, and the two, three, four, six, eight, or ten cylinder web machines.

Cylinder Sheets — The sheets fastened upon the cylinder, which form the basis of the make-ready; the packing, or tympan.

D — Signifies 500 in Roman numerals.

Dabber — A soft leather or silk ball, for inking a printing form, used more frequently by engravers; another term for the old-time inking ball.

Dagger [†] — A reference-mark used in writing and printing. In type, it belongs to the group of characters (* † ‡ § ‖ ¶ ☞) which accompany the capitals of roman fonts, and which are usually placed in the top row of boxes of one side of the capital case. Also called the obelisk.

Dandy Roller — Attached to paper-making machines. The wet web of paper carried on the endless wire of the machine passes under this roller and is pressed by it. It gives the laid or wove appearance to the sheet, and when letters, figures, or other devices are worked in fine wire on its surface, it produces the water-mark.

Dashes — Cast in type of all sizes up to and including 24-point. In smaller sizes they are in four lengths: en –, em —, two-em ——, three-em ———, and are included with the miscellaneous characters in fonts of roman capitals. As a mark of punctuation, the em dash has various but not always proper uses. It may rightly serve in place of the parenthesis, and to indicate an abrupt change in a statement, to connect side heads with their text, or in place of a colon to indicate that something is to follow. Its use after another point (like ,— or :—) is not generally approved by good printers and proofreaders. With its longer mates, it formerly served to indicate suppressed words or parts of words, like M— d——. The en-dash is more often used in place of the short, stubby hyphen when that mark does not seem adequate, as in compounding words in capitals, etc., like RED–HOT, 1905–1906; it is also used to extend a pieced brace, thus: ⌐–-⌃-–¬. The longer dashes serve many purposes

in all kinds of work. In addition, the term is given to metal and brass rules of various lengths and patterns (————•—•————), used for separating headings, articles, and other divisions of type composition.

Davis Oscillating Press — Made in Rhode Island about 1850–1860. Its mechanical principle was a triangular frame with a curved face, like part of a cylinder surface, which rocked backward and forward over the printing form.

Day, John — An eminent British printer of the sixteenth century.

Daye, Stephen —The first printer in British America; he erected and operated a press in Cambridge, Mass., in 1639.

Dead — Applied in several ways to matter whose usefulness or interest has gone by: dead matter is type that has been printed and is ready for distributing; dead copy is that which has been prepared but for some reason is not to be used. Type forms, after use, are *killed;* sometimes part is *saved* for use again, and, with all other matter ready or in preparation but not printed, is *alive.*

Dead Horse —Work charged and paid for before being done. A journeyman who performs work for which he has already been paid is working for a dead horse.

Decimo-octavo — The fold of a book known as 18mo. This Latin name is not often used among printers.

Decimo-sexto—Bibliographical term for 16mo.

Deckle-edge — The untrimmed feather edge formed where the paper pulp flows against the deckle. Hand-made paper has four deckle edges, machine-made paper two.

Dedication —A note following the title page of a book, in which the author inscribes the work to a particular person or persons. The modern dedication is usually brief, set in plain roman capitals, with sometimes a line of black-letter, and occupies the middle of the third page. Old-time dedications were addressed to patrons who were persons of rank, recommending the book to their protection and favor.

Degener Press—See *Liberty Press.*

Dele [∂]—A proofreader's mark, signifying to take out, to expunge.

Delete—To omit, to take out words or letters.

Delivery Board—The table on a press where sheets are placed after printing.

Delphin—A name applied to an edition of Latin classics made by order of Louis XIV of France for the Dauphin, and esteemed for accuracy and fine workmanship.

Demy—A writing-paper size, 16 x 21 inches. In England the size is 15½ x 20 inches.

Descenders—The letters which have part of their faces below the line; g p q y, etc.

Detergent—A prepared wash for cleaning ink or grease from type, etc.

Devil—The errand-boy or youngest apprentice in a printing office. Various accounts have been given of the origin of the term. One is that the early printer was supposed by superstitious persons to produce copies from manuscript with marvelous rapidity by the aid of the black art, whence the devil was deemed his natural assistant, and this word was applied to printers' apprentices. Another story is that the term originated with Aldus Manutius, who, when he commenced the printing business in Venice, had in his employ, or rather in his possession, a small negro boy, who became known over the city as the "little black devil," a superstition having been circulated that Aldus was invoking the aid of the black art, and that the little negro was the embodiment of Satan.

De Vinne—A name given to a series of bold-faced roman type which has been popular for the past fifteen years: **De Vinne.** So named in compliment to Mr. Theo. L. De Vinne, the well-known New York printer.

Dextrine—A substance resembling gum-arabic, used in sizing paper, for gumming stamps, labels, and in book-binding.

Diæresis—Two dots placed over the second of two adjacent vowels to denote that they are to be pronounced separately: coëxist, coöperate, preëminent.

Diagonal Indention—When lines of type are so arranged that they follow

Diagonally under
each other like
these three lines

or

Diagonally under
each other like
these three lines

Diamond—The smallest size of type usually cast, equal to about 4½ points; not often used, except for notes and references in small books.

Diary—A memorandum book arranged so as to give a space for each day, week, or month of the year.

Die Stamping—Frequently employed for note paper, envelopes, and cards, the printing, or stamping, being done in relief by means of engraved dies. The die is usually a piece of steel having the letters or design cut in it; the engraved part is then covered with ink, the paper placed on it, and the stamping done by means of a counter die of a hardened plastic substance, which embosses the sheet.

Diphthong—Two vowels joined together: Æ Œ æ œ; chiefly in words from the Latin. Modern usage often discards them, as in Caesar for Cæsar, esthetic for æsthetic.

Direction Word—In old-time books, the first word or syllable of a succeeding page placed at the bottom of the page, to direct the reader to the page next in order; the catch word.

Dis.—Abbreviation for the word distribute.

Dished—A defect in an electrotype or other printing surface, in which its center is lower than the edge.

Display—Type composition in which various sizes and faces are used, like advertisements, title pages, catalogues, etc., in distinction from straightaway work, which is composition in one size and one face in uniform lines and paragraph form.

Display Type—A general term for those styles of heavier type-faces designed for headings, advertisements, etc., as distinguished from those used for plain reading matter; commonly put up by founders in small assortments called job fonts.

Distribution—To put types back in their respective cases and boxes after use. In press-work, the uniform spreading of ink on rollers and face of the printing form.

Distributing Roller—On cylinder and some small presses, the roller which moves diagonally back and forth over the inking plate or other rollers, to distribute the ink evenly; the distributor, the vibrator.

Division of Words—The separation of words on syllables at the ends of lines; a necessary custom in type composition, in order to make lines of equal length and to avoid as much as possible unequal spacing between words. This is one of the most perplexing duties of the compositor, as there are no clearly defined rules for his guidance; the custom in one establishment, or the wishes of one author or proof-reader, may and often do differ from those of another.

Dodger—A small hand-bill, formerly used for theatrical advertising, and distributed about the streets.

Dog-eared—Having the corners of the leaves turned down and soiled by careless or long-continued usage.

Dollar Mark— [$] Representing amounts of money in America; it is placed close to the figures, without spacing, thus $25.

Domesday Book—A book compiled by order of William the Conqueror, containing a register of all the lands in England. It was printed in 1873 in fac-simile, as far as that could be done with types.

Donatus—A boy's Latin grammar, which derived its name from its author, a Roman of the fourth century. It was frequently printed about the time of the invention of printing.

Dotted Rule—Brass rules with dotted face, for blank work, to serve as a guide for writing on : . . . . . .

Dot Leaders—Those cast with dots thus . . . in distinction from hyphen leaders - - - - -

Double—Words repeated in composition by error ; a doublet. Also when a sheet has been printed twice, or mackled. The term double is applied in many cases before other words, to denote double quantities, sizes, or qualities, such as double-pica, double-frame, double-demy, double-cylinder, double-rolling, double-rule, double-title, etc.

Double-column—When the measure extends across the width of two regular columns, as in newspaper work.

Double Dagger [‡]—See *Reference Marks.*

Double Letters—Diphthongs æ œ, and ﬆ ﬁ in old-style types.

Dove-tail—A form made up of pages which do not follow each other in consecutive order.

Drag—When the end of a sheet printed on a cylinder press does not print clean and sharp, because of not being held close to the cylinder, it is said to drag.

Drawing Paper—Usually hand-made of the best material and well sized, for drawing upon.

Draw-sheet—The top sheet, drawn on over the make-ready on a press.

Drive Out—To space words widely to fill the line and drive out a word or syllable to the next line. In wide-leaded matter prefer to drive out; in solid matter prefer to take in, by thin-spacing.

Drive—In type founding, when the engraver has cut the punch its soft steel is hardened until it has strength to penetrate copper. It is then punched into a flat, narrow bar of cold-rolled copper, making a reversed duplicate of the letter on the punch. This is known as a drive, or a strike, and when finished and adjusted for the mould it becomes a matrix, in which the face of the type is formed.

Drum Cylinder—A printing press having a large cylinder, the printing surface occupying only less than one-half of its surface, and making an impression at each revolution. See *Cylinder Presses*.

Dry Colors—Finely-powdered pigments, applied with a brush or pad to sheets printed with varnish or sizing, as is commonly done with bronze powders. The object is to secure color with a brighter luster than when the coloring pigment is mixed with oil like ordinary printing ink.

Dry Point—A sharp needle used in copper-plate engraving, to cut fine lines and dots.

Dry Pressing—To press out the indentations made by types after printing, so that the printed sheet is perfectly smooth. This is done in a strong screw or hydraulic press, the printed sheets being placed between sheets of hard-rolled cardboard.

Dryer—A varnish preparation for mixing with ink to increase its drying properties.

Drying Rack—A stand or frame with shelves for holding printed sheets in small lots when they come from the press until the ink dries. Freshly-printed sheets must be handled carefully to prevent the set-off of ink from one sheet to the back of another; the finer finished the paper, the greater is the care required.

Ductor—The reservoir which holds the ink in a printing machine; the ink fountain.

Duck Roller—A roller on a hinged frame, which supplies ink from the fountain-roller to the distributing-roller or the ink-table.

Dummy—A few pages or parts of a proposed book, pamphlet, or periodical, put together so as to show in advance the plan, design, or arrangement to be followed; it may be sketched with pen or pencil, sample lines or pages printed, or proof-sheets mounted on it, the intent being to show how the work will be when completed. A dummy is now a necessary preliminary to all printed work of importance.

Duodecimo—A sheet folded so as to make twelve leaves, usually indicated as 12mo. or 12°. It is smaller than octavo (8vo) and, like it, is now of no fixed dimensions, being about 5 x 7½.

Dupe—An abbreviation of duplicate, the second proof taken of type-matter which is to be paid for by the piece. The *dupes* of a compositor's work are, at the end of the day or the week, pasted together and measured, and the charge therefor made accordingly at the stated price per thousand ems of the type set.

Dutchman—A joke-name for a small piece of wood or tooth-pick driven into a part of a type-form that is imperfectly justified, to make it tight. Its use is not creditable.

Dutch Paper—A rough, deckle-edged, hand-made paper, made in Holland, imported and used for occasional work of rugged old-style character.

Dwell—When the impression of a form on the press is at its maximum.

Duplex Card or Paper—That having the two sides colored differently.

EARLY IMPRESSION—Said of a print from an engraving; it is considered more valuable than a later impression when the plate has become worn.

Eclectic—Selected; applied to magazines and books whose matter is selected and reprinted from other publications.

Edition—The number of copies of a book, magazine, or newspaper printed at one time.

Edition de luxe—Books printed in specially sumptuous or elaborate style, with fine paper and bindings, and in comparatively small editions.

Editor—The chief writer for a newspaper or other publication, or he who is responsible for its policy or management; also the person who revises or prepares copy for publication.

Editorials—The articles in a newspaper or magazine which express the opinions of the editor; usually occupying a page or department by itself. In newspapers the editorials are usually in larger type than ordinary matter.

Eidograph—An instrument for copying drawings on the same or different scale; a form of pantagraph.

Eighteenmo—A sheet folded into eighteen leaves, or thirty-six pages; generally written 18mo; octodecimo.

Eights—A familiar term in imposition for sheets of octavo.

Electro-etching—A method of etching upon metal by electro-chemical decomposition.

Electricity in Paper—This causes the printer much trouble at times and under certain conditions. The electricity is generated in the paper during manufacture and remains stored while in bulk and until dissipated or released. The handling of the sheets and their passage through the press excites the electric fluid, causing the sheets to stick together so as to set-off fresh ink, to adhere to the press-table, and otherwise to become unwieldy. Weather conditions have much to do with the trouble, the cold dry atmosphere of winter tending to make it more difficult to get rid of the electricity, which passes off easier in the moist air of summer. In small quantities of paper it is easier to dissipate the fluid than when paper is in large bulk. Various methods of overcoming the trouble have been devised, but none have proved unfailing under all conditions. Wires placed against the bed, cylinder, or delivery-table of the press, to draw off the electricity, have at times been effective; devices for keeping the air of the room moist have sometimes proved a remedy; patented processes and chemical dissipaters have also been used.

Electrotyped Letters—Types made by the electrotype process, as distinguished from cast types; mostly ornamental initials and special characters, which must first have been engraved to furnish a form for moulding.

Electrotype — A copper-faced duplicate, in one piece, made from a page or form of type, engraving, or other object which may be used to mould from. The process for making an electrotype for printing purposes is as follows: The type is locked, usually in small forms, in a chase, each page, as well as the larger blank spaces, having around it metal guards of the height of type. An impression is then made in a sheet of wax having its surface dusted with black lead or plumbago. This wax impression is then suspended in a galvanic bath in which copper is present in a state of solution; the copper being affected by electricity, leaves the solution and deposits itself in minute particles upon the face of the mould. When the copper film is thick enough it is stripped from the mould, and after a covering of a tin compound, which acts as a solder, the film is backed up with melted metal resembling type-metal. This produces a metal plate with a copper face which is a duplicate of the original type form or engraving. The finishing of the plate requires beating up the low places to an even level, correcting defective parts, shaving the surplus metal from the back to make it of true and uniform thickness, and mounting on wood or otherwise to make it type-high, and trimming the edges. When it is intended

to use the electroplates on the modern patented bases, or blocks, they are simply shaved to a required thickness and the edges beveled so that they may be held by small hooks attached to the blocks.

Elephant — A size of writing paper, 23 x 28 inches; in England, the sizes of elephant are: printing paper 23 x 30, writing paper 23 x 28, wrapping paper 24 x 34 inches.

Elision — The cutting off or suppresion, as of a letter from a word which is pronounced in its abbreviated form: don't, o'er.

Ellipsis — Marks indicating omission of letters, words, or paragraphs. Asterisks are sometimes used * * * *, dashes ——, periods . . . . . , and other marks.

Elzevir — The name of a celebrated family of printers in Holland during the sixteenth and seventeenth centuries. The name is now given to a style of roman type resembling that used by the Elzevirs, and which, in several varieties, is used for fine work. Called also French Elzevir and French Oldstyle: ELZEVIR. French Oldstyle.

Em — The square of a type body. The common method of measuring type composition is by ems, the number of ems in a line being multiplied by the number of lines. The term is applied in many ways to printing material, as em-dash —, em-quad ■ (10-point), etc.

Embossing—The process of impressing letters, figures, or designs in relief upon paper or other material. As done ordinarily in connection with printing, it involves the cutting of a metallic die, into the surface of which the design is made. The die being locked up for the press, in the same manner as a type form, and the ink rollers removed, an impression is made upon a tympan which is covered with a plastic substance into which, while soft, the die is pressed. This impression is then allowed to harden, and when properly trimmed forms the counter-die. The sheets to be embossed, which have already been printed flat with the design in needed colors, are then fed to gauges which register the embossing die to the printed design. Various methods are employed for making counter-dies for embossing, but all methods require the engraved, stamped, or otherwise cut die for the design. Printing for the blind is embossed with special types, and requires a leaf for each page of such work.

Embossed Imprint—A method by which, at the same time that an impression is made with ink, the printer's or maker's imprint is embossed on the sheet without color.

Empty Case—A case without sorts or letters which are needed to compose the line; it may have other letters but is empty of those required.

Embossing Press—A machine used largely in book binderies for impressing book cover designs, etc. Several styles are made, all of very strong and heavy construction. For embossing stationery, leather, and small work, a hand-press having a screw similar to a letter-press is employed. Another style is like the ordinary job printing press, but much stronger, and is used with ink rollers, or when the die is embossed without color. Heat is necessary for stamping gold-leaf, requiring another style of machine with a gas-burner arrangement for heating the die. See *Stamping Press.*

Emerald—A size of type common in England, larger than nonpareil and smaller than minion, or about 6½-point. Formerly known in this country as minionette.

En— One half the width of an em body; in England the en is the unit of measuring type composition, instead of the em, as in this country.

En-quad—The space next thicker than the three-to-em, and one half of the em-quad.

Enameled Paper—A specially prepared surface, formed by a coating of clay or other mineral substance, and smoothed by hot rollers under great pressure; used largely for labels and cover stock, but often difficult to print on, as it does not readily take common printing ink.

End Even—To finish copy even at the end of a line of type, without blank, or regard to paragraph. A practice formerly common in newspaper offices where it was necessary to divide copy into takes; when the division came in the middle of a sentence the compositor was required to make his take end even so as to join without a break that which followed.

End Papers—The blank leaves at the beginning and end of a bound volume, one sheet being pasted down upon the boards.

Engine-sized—When paper is made from pulp sized in the beating engine, in distinction from hand-sized or tub-sized paper, which is sized after it is otherwise completed.

English—A size of type next larger than pica, or about 14-point.

Engraving—The act or art of producing letters or designs on wood, metal, or other substances, by cutting or corrosion, for the purpose of being printed on paper or other material. The chief methods of engraving now practiced for illustrative purposes are: Steel or copper-plate engraving, which is hand work; wood engraving, also hand work; wood engraving has been largely superseded by photo-mechanical or process engraving, done by photography and etching acids; and lithography, which is printing from specially prepared stone.

Envelope—A paper cover for a letter or other document, now also used for many purposes. The most common kinds are: drug, pay, commercial, and official. The official sizes are about 9 or 10 inches long by 4 inches wide; commercial sizes are the most generally used, 6 to 7 inches long by 3½ to 4 inches wide; pay envelopes are smaller, drug envelopes used by apothecaries are still smaller. Besides these, although not made in such large quantities, envelopes are made for innumerable other purposes. Some envelopes are cloth-lined for greater security, and others are made from every variety of paper. They are usually packed in boxes of 250, 500, or 1000 envelopes. Stamped envelopes are furnished by the Government in common sizes; these have the postage stamp printed on the corner and are furnished at a very low cost. Ordinarily the printing of envelopes is not very desirable work, partly because of the low prices and also because of the difficulty of printing on the face of a sheet that has overlapping gummed edges on the back. What are called high-cut envelopes (that is, the back sheet under the flap being cut high so as to bring it near the edge of the envelope) present less trouble to the pressman in printing. Envelopes which have elaborate designs or engravings covering a large part of their face are only printed

satisfactorily before the sheet is folded and gummed; for this purpose they may be obtained flat from the makers, and after printing returned for folding and gumming.

Equal Mark—An arithmetical sign: =. In the absence of the proper type the parallel mark ‖ turned sideways may be used.

Equivalent Weights of Paper—The difference in weight between two sizes of any given kind of paper, to compensate for a larger or smaller sheet. For example: A book is printed from stock 22 x 32 inches, weighing 40 pounds to the ream; it is desired to print another book on the same stock but in sheets 28 x 42 inches. What should be the weight of the latter?

22 x 32 : 28 x 42 :: 40 : 66¾.

The area of the smaller sheet is 704 square inches, and of the larger 1176 square inches; therefore, 40 pounds of the smaller size would be equivalent to 66¾ pounds of the larger.

Errata—Applied to a list of errors and corrections in a book which are of sufficient importance to be called to the attention of the reader; sometimes inserted at the end of the book, in other cases at the beginning; or printed on a slip and tipped in beside the page containing the error. Modern methods have made the need for errata-pages less frequent than formerly.

Error—Applied to any kind of deviation from correctness in type composition.

Etching—The art or practice of producing figures or designs on metal, glass, or the like, by means of lines or strokes eaten in or corroded by means of some strong acid. The plate is first covered with varnish or other ground capable of resisting the acid, and this is then scored or scratched by a needle or similar instrument, so as to form the drawing; the plate is then covered with acid, which corrodes the metal in the lines thus laid bare.

Even Folios—The page-numbers of the left-hand pages, 2, 4, 6, etc. The odd folios are those of the right-hand pages, 1, 3, 5, 7, etc.

Ex Libris—A book-plate, or label of ornamental, fanciful, or significant design, placed inside the cover of a book to indicate the ownership. Book-lovers thus label the volumes of their libraries, a practice that has been in vogue more or less for centuries, and popular at the present time. Eminent designers and engravers have made plates of this class which have much interest for book-men and collectors.

Excelsior—A size of type little used, one half the size of brevier, or about 4-point.

Exclamation Mark [!]—In some uses called admiration mark. In shop parlance, often called the "screamer."

Exchange—A newspaper sent to the office of another paper in exchange. An exchange editor or reader is one whose duty it is to look over other journals sent to his office, for the purpose of culling matters of interest or comment, for his own journal.

Expurgated Edition—An edition of a book or publication in which offensive or objectionable words or expressions which appeared in other editions have been omitted.

Extended—Applied to faces of type made extra broad: EXTENDED. Sometimes called *Expanded*.

Extra—An edition of a newspaper following the first regular edition for the day.

Extras—The charges on composition above the regular or fixed charge, on account of additional labor, etc., as for setting tables, foreign languages, etc.

Extract—A passage taken from another book or another author's writing; a quotation.

Extra Condensed—Used to describe a type face which has been compressed very thin sideways, as: Gothic Extra Condensed. A style used largely in narrow columns of newspapers and in advertising work.

F—The lower-case f is often kerned—that is, has part of the face projecting over the body; this overhanging beak is easily

broken off when the letter comes immediately before another tall letter, so that most roman fonts are supplied with combinations fi fl ff ffi ffl cast on single bodies without kerns. These combinations are more familiar in ordinary reading than the separate letters, as will be noted in these examples, fine, fine, flow, flow, office, office, affluent, affluent.

Fac-simile—An exact reproduction; a copy which cannot easily be distinguished from the original; often abbreviated to *fac-sim.*

Face (of a type or form) — That part which prints, as distinguished from the shank and shoulder; also used to express one style of type from another, as plain face, heavy face, light face, etc.

Fair Office — In the language of members of the typographical union, a fair office is a union office where union prices are paid, and an unfair office is one which is not governed by union rules.

Fake — Applied to a made-up story or proposition in which there is little or no truth; a pretence, a cheap imitation made to look like the real thing.

False Motions—The unnecessary movements made by some compositors in type-setting. Present-day workmen are not so prone to habits of this kind as those of the last generation. Some of these were to bring the

type to the stick and hit it once, twice, or three times against the composing rule before leaving it in place; to hit it on the centre bar of the case on its way to the stick; to carry it beyond the stick and put it in place with a flourish in the air; to stand before the case with a bobbing motion, keeping time to each letter picked up; and other time-consuming motions and peculiarities which became fixed with those who paid little attention to acquiring right habits, and whose methods of setting type seem ludicrous to the uninitiated.

Fanning—In counting sheets of paper, to brush or move them from each other so that the edges are separated in fan-fashion; this may be done by grasping a quire or two between the fingers and turning up the edges with a rolling movement, bringing them up where they may be counted with the fingers of the other hand.

Fat—Type composition in which there are many blanks or large spaces, enabling the compositor to set a large number of ems in a given time, as large headings, poetry set open, double- and triple-leaded matter with many break-lines, cuts measured in with type, etc. Type set solid, with few or no blank-lines, is lean.

Fat-face or Full-face—A style of type broader or with the heavy lines heavier than usual: **Fat-faced Letter.**

Father of the Chapel—The presiding officer of a chapel or organization of union workmen in a printing office. An old-time designation; now the chairman of the chapel.

Fecit—A Latin word meaning "he has made it," frequently added to an artist's name on an engraving or picture. *Del.* (*delineavit*, "he drew it") is sometimes seen on old prints and drawings in similar use.

Feeder—A person who supplies a printing press with paper, one sheet at a time. This part of printing-room work was formerly considered boy's work, but the increasing size and complexity of modern presses now call for more skill and endurance, and men of experience are now often required to do this work.

Feed-board—The table on a press upon which white sheets are placed to be supplied sheet by sheet for printing.

Feet (of a type)—The bottom of the shank, formed by breaking off the jet and grooving when the type is cast. Type that is not standing perfectly upright is said to be "off its feet."

Figures—The ten characters commonly used to represent numbers are known as Arabic figures: 1234567890. Roman numerals (IVXLCDM) are often used in books and programs for chapter and paragraph numbers and other subdivisions, but they

are not so clear nor convenient as the figures, and are not practicable for statistical and tabular work. The Arabic figures are now cast for all fonts of type, and they occupy boxes in the same division of the type-case as the lower-case letters and points; when the font contains capitals and no small letters, the accompanying figures are usually kept in the top row of boxes above the captials. For most roman fonts the figures are cast on bodies of the uniform thickness of an enquad, though they are sometimes made wider. Originally the Arabic figures were of very irregular shapes, which were gradually modified to the forms at present known as old-style figures: 1234567890. Designers of modern types have brought the figures into still greater uniformity in the modern lining figures: 1234567890. These two styles of figures are distinctive features of the old-style and the modern designs of type-faces; but type-founders have of late made old-style figures larger and brought them on a more uniform line: 1234567890. For tables and for use in lines of capitals the figures on uniform line are preferred, but for frequent numbers in a paragraph the smaller old-style figures are better mates for lower-case letters.

Fingers — The grippers on a press which hold the sheet when printing.

Finis—A Latin word used at the end of a book. Modern practice is gradually discarding its use.

Finisher—One who finishes the binding of a book. Also, in electrotype work, the workman who, after the plate has been made, examines it for imperfections, levelling the face, trimming, and otherwise preparing it for printing.

First Form—The form which contains the first page of a sheet, the outside form, usually the one printed first.

First Page—In imposing, the first page of a regular form; in a work done in eight-page forms, first pages would be 1, 9, 17, 25, etc.

First Proof—The first taken from the type; when errors have been marked and corrected, the second proof is a *revise*.

Fist—A common name for the index-mark: ☞; also called a hand.

Flat Paper—Paper in unfolded sheets. Usually applied to all kinds of writing papers which are put up flat by the maker.

Flat Cap—A size of writing paper 14x17 inches.

Flat Proof—A proof made without underlays, overlays, or other make-ready, as of an engraving.

Flat Tint—A light color printed from a flat plate, without engraved lines or other marks, usually to color a panel or outline.

Flimsy — A term applied to any thin paper, such as telegraph copy is written on in newspaper offices; tissue-paper or manifold copy.

Flitters — See *Flock Printing*.

Floating Accents — The name given in England to separate accent-marks which may be placed beside any letter needed. In America called piece accents: ´ ` ^ ~ ¨ Made for job faces and large types.

Flock Printing — A method of printing with varnish, to which small particles of wood or silk are afterward made to adhere, somewhat in the same manner as printing with sizing and bronze powders or dry colors. Thin bits of tin, brass, and the like, called flitters, are also used in printing Christmas cards and other work, to give effects of frost, etc.

Flong — The prepared paper used for making moulds for stereotypes.

Floor Pi — Type dropped on the floor by careless compositors.

Flourishes — Curved lines and ornaments made for use with lines of type, sometimes of brass and in other cases of cast metal. Formerly popular, but now out of style:

Floret—A small flower or part of a flower; in printing, the name is given to any flower or leaf-shaped type ornament:

Flowers—A term given to early type ornaments made for borders and decorations; now commonly called borders or florets.

Fly—The delivery apparatus on a cylinder press. It is usually a large frame of long sticks or fingers attached to a bar which moves on an axis, receiving the printed sheets one by one from the cylinder and flying them over upon a receiving table. In early days boys were often employed to take the printed sheets off the tympan of the hand-press, to expedite the work of the pressman; early power-presses required this work to be done by hand.

Fly-leaf—A blank leaf at the beginning or end of a book; it may be inserted by the binder, but may be a blank leaf of the first or last sheets of the printed work.

Fly-title—In England this term is sometimes applied to the half-title or bastard-title, but not used in America.

Flying a frisket—The operation of turning down the frisket of a hand-press at the same time the tympan is closed on the form. A skillful performance formerly used to hasten work but now obsolete, with other operations which were necessary when all work was done on hand-presses.

Folder — A small stick of ivory, bone, steel, or wood, used in folding sheets by hand. A printed sheet of four or more pages so imposed that they follow each other consecutively on one side of the paper, when it is opened, like a railway time-table, etc. A folding machine is often called a folder.

Folding Chases — A term sometimes applied to chases used for weekly newspapers; usually in pairs, with the sides which fit together thinner than the others; more frequently called twin chases.

Folding Machine — A machine for folding printed sheets of books, magazines, and newspapers. For book and magazine work the folding machine is separate from the printing press, but for daily newspapers the folding machine is attached to the press, so that the paper, unwinding from a roll, is printed and then goes forward to be cut off and folded. In the book-folding machine the sheets are fed to gauges or points. A descending blade at the middle of the sheet forces the paper through an opening in the table; the paper is then caught by rollers or tapes which carry it to another fold, and so on until all are made. Some folding machines are made to attach to single- and double-cylinder presses, and sheets are run into them without extra feeding. Other machines fold, paste, and insert one sheet within another,

or within a cover. Sheets to be folded by machines usually require the pages imposed differently than when the folding is done by hand.

Folio—A sheet folded once, consisting of two leaves or four pages; usually understood as a sheet the size of 18x24 inches, which gives a folded leaf 18 x 12 inches. Also a leaf containing a certain number of words; in English law work seventy-two or ninety words constitute a folio, in New York one hundred words. Also the consecutive page-numbers of a book, pamphlet, or other work.

Folio Post—A size of writing paper 17 x 22 inches.

Follow Copy—When a compositor receives this instruction it indicates that in matters of punctuation, use of capitals, italics, style of type, peculiar or variable spellings, etc., the copy is to be his guide. In many cases the rules of the house, the style adopted for a particular work, and other matters, may not be observed by the writer; or several writers for one work may vary greatly in these particulars; so that it is often the compositor's duty, in setting the type, to make changes from copy to keep the work consistent.

Font Case—For holding reserve or surplus sorts; oftener called sort case.

Font — A complete assortment of types of one size and face, containing a due proportion of each letter, large and small, points, figures, etc. Formerly it was all that was cast at one time, but it is now understood as the assortment which is furnished by the foundry; it may be designated by its weight, which is the case with small type in large quantities, or by the number of letters it contains; as in the case of larger sizes, used in small quantity, for jobbing, display, and advertising. In the latter case, the size of a font is usually indicated by the number of capital A, small capital A, and lower-case a (as 40 A 20 A 80 a) it contains, the number of other letters varying according to the foundry's prescribed scheme.

Foolscap—A size of writing paper 12½ x 16 inches. In England foolscap printing paper is 13½ x 17 inches, writing paper 13½ x 16½ inches. So called from a water-mark of fool's cap and bells used by old paper-makers.

Foot-line—The bottom line on a page, usually blank; it may sometimes contain the page-number, signature-mark, etc., and when the last line of a paragraph will not come into the regular length, it may take the place of the foot-line, in order to prevent the paragraph ending on the top of the next page.

Foot-note — A note or reference at the bottom of a page, usually set in type several sizes smaller than the main text.

Foot-stick — A piece of furniture, wood or metal, put inside of a chase at the short side of a form, against which quoins are placed to lock up. The long side has side-sticks. Before the introduction of mechanical iron quoins foot-sticks and side-sticks were larger at one end than the other, in order to form a wedge-space into which pieces of wood could be driven and thus tighten up the form.

Fore-edge—The outer edge of a book.

Form—A page or number of pages, engravings, or lines of type locked in a chase ready for printing. When the lines of type have not been properly justified, or the furniture, side-sticks, or quoins are not true, the form will sometimes spring — that is, some part will not lay solidly on the bed of the press. In this case, spaces, quads, leads, or furniture will work up to the level of the type during printing and show on the white paper. When the form is taken from the imposing stone and all parts are of equal tightness and no types are loose, the form rises, or lifts.

Form Rack—For holding forms in a slanting or perpendicular position, before or after use.

Form Board—A shelf for holding forms; a letter board.

Format—The size, form, proportions, etc., of a book or other work.

Forty-eight or 48mo—A sheet of forty-eight leaves. Like other forms, usually made up of a number of smaller folds set into each other.

Forwarding—The processes of binding a book, after the sheets are sewed until it is in the cover; the lettering, ornamenting, and other work to complete it, is finishing.

Foul Case—A type case so badly mixed in distributing or otherwise that it is difficult to set from. A foul proof is one with many errors.

Foundry Chase—A small chase made extra thick and strong, for holding forms that are to be moulded for electrotyping, etc. Forms to be moulded in wax need extra strong locking up to prevent letters or lines from pulling out when form is taken from the wax.

Foundry Proof—The final proof taken before sending a form to the electro foundry.

Fount—Another spelling of *font*, used in England.

Fountain—A reservoir for holding ink, and attached to the press; usually with an arrangement of rollers which carry ink to the distributing table or form-rollers.

Fractions—Made in several styles. Common fractions like these $\frac{1}{4}$ $\frac{1}{2}$ are cast in one piece on en bodies, and are properly used with modern roman figures, thus: $5\frac{1}{4}$ $6\frac{1}{2}$. Another kind are piece fractions, each figure cast separately on bodies one half the size of the type they are used with: $\frac{1}{3}\frac{2}{4}$ $\frac{1}{3}\frac{}{0}$ $\frac{2}{4}\frac{7}{2}$ $\frac{2}{3}\frac{0}{}\frac{0}{}$. They may be combined to make any desired fraction. For use with old-style figures, fractions like these are provided, ½ ¼ ¾ ⅞ ⅝ etc., made in one piece on em bodies. This style is made both with old-style and with modern figures, and in open-faced matter gives greater clearness than the thinner en fraction. Another and later style are the self-spacing piece fractions made on full bodies of an en thickness; there are four sets of the ten figures — one on the upper half of the body, $^{1\,2\,3\,4\,6}$, and another on the lower half, $_{1\,2\,3\,6}$; two other sets have diagonal strokes, one below and the other above the figure, $^{1}/_{2}$ $^{3}/_{4}$ $^{1}/_{2}$ $^{3}/_{4}$. These are combined thus: $\frac{1}{4}$ $\frac{7}{9}$ $\frac{3}{53}$ $\frac{19}{710}$. In the absence of proper types, makeshift fractions like these are sometimes employed: 1-2, 3-4, 2-3.

Fraktur—The name of the text or black-letter used for German body-type.

Frame—The stand on which type cases are placed. To have a situation in a newspaper or book room is to "hold a frame."

Friar—A light place in a printed page, caused by imperfect distribution or lack of ink. A black spot is a monk.

Frisket—A light iron frame covered with paper and attached by hinges to the tympan of a hand-press, to hold the sheet in place and protect it while being printed. An impression is first made upon the frisket sheet and the printed portions cut away; when the printing paper is placed upon the tympan the frisket is turned down, exposing only the portions of the paper that are to be printed. In this way margins and blank spaces of the sheet are protected from the inky or oily furniture, chase, etc., and the sheet is laid on the form with less liability of slurring than when laid on loosely. A frisket is often employed on rotary job presses, either wholly or partially covering the printed sheet, as may be required. In this case, the frisket sheet is fastened to the movable grippers, being stretched across in front of the form, and an impression made on it. The printed parts are then cut out, allowing the form to print on the white sheet lying on the tympan beneath.

Front Pages—Those in the first half of a folded signature.

Frontispiece—The picture facing the title-page of a book.

Fudge—To devise; to contrive; to make shift; to work without proper tools.

Fugitive Colors—Colors or inks which are not permanent, and change or fade when exposed to light.

Full Color—When ample amount of ink has been used in printing.

Full-face — See *Fat-faced.*

Full Measure — Type composed to the full width of the page, and not half-measure, or other fractional division.

Full Page—A page filled from top to bottom with type lines, as distinct from a short page like the first or last page of a chapter.

Full Point or Full Stop — The period is often thus called.

Full Press — When printing was done on hand-presses, two men were accustomed to operate it — one to roll the ink, the other to put in the sheet and pull the impression; this was working a full press.

Furniture — In printing-office speech this term is given to all pieces of wood and metal designed to fill blank spaces between pages and around type-forms when locked in a chase. It is made in many lengths and widths, but the sizes are usually mutiples of 12-point, or pica. The largest pieces are of cherry or pine, three feet long and ten picas wide. Thin strips of wood of the width of great-primer (or

18-point) and thinner are known as reglet. Metal furniture, cast with hollow spaces to lighten its weight, is usually not longer than one foot, and ten picas wide. It has the advantages over wood of greater accuracy in body, not warping when wet, and yielding less under the pressure of locking up. It is made in several styles, the most common being hollow frames, with bars or braces lengthwise and crosswise in the larger pieces. Quotation furniture is hollow on one side only, the top being solid, like a large quad. Reversible furniture is concaved on the top and bottom, but with a solid area, and presents both ends of each piece shaped like this: ⊢. This kind is serviceable for gutter-margins and in other places where lock-up pressure is needed only on two opposite sides. The smallest piece of cast metal furniture is 3 x 2 picas, and other sizes increase by picas and multiples of pica in length and width. Labor-saving fonts contain an assortment of different sizes which may be combined in many ways. Steel furniture has now become common, and has advantages in filling large blanks. It consists of pieces of machine-finished steel, in pairs, with notched ends so that they fit into each other; thus, four pieces are placed around the blank space, forming a hollow square, and held together firmly by the pressure of locking up.

GALLEY—The shallow tray used by compositors to hold type after the lines have been set in the composing-stick. It consists usually of a thin brass bottom with three perpendicular sides a little more than half an inch high; the fourth side is open to permit of the type, when tied up, being pushed off on to the imposing-stone or elsewhere. The usual full-length galley is about two feet long and from four to seven inches wide, but many wider sizes may now be obtained. Short, wide galleys of various sizes are used by job compositors for making-up book pages and for other special uses. Galleys made entirely of wood, and others made of wood and zinc are sometimes used, but the most serviceable galleys are of brass or brass-lined.

Galley Press—A proof-press upon which the galley of type may be placed and proof taken. It consists of a flat iron bed with two sides high enough to form tracks upon which an iron cylinder, covered with cloth or felt, is made to move; when the type has been rolled with ink, the sheet of paper is laid on, and the cylinder is rolled over to make the impression; a style of proof-press used mostly in newspaper and book rooms.

Galley Slaves—A term of derision formerly applied to compositors.

Galley Rack—Made in several forms, for holding galleys of composed type. It has brackets or shelves which hold the galley tilted sideways, so that type lines will stand securely against the lower side of the galley.

Galley Rest—A pair of brackets or similar attachment placed on the compositor's stand to hold the galley, so that the cases may be free for composing.

Galley-lock—A device attached to or placed in a galley, to hold the composed type securely while it is being proved or waiting; made in many varieties, usually consisting of a long side-stick with a clamping arrangement on the sides and at the foot of the type matter.

Gally Universal Press—Invented by Merritt Gally of New York, in 1869; a platen job press of strong construction and embodying several distinctive principles.

Galvanoglyphy—A method of etching upon a zinc plate covered with varnish.

Galvanography—A process of making copper-plate engravings by the action of a galvanic battery.

Galvanoplastic Process—A method of obtaining electrotypes of fossil fishes and similar objects, which can be printed on a typographic press.

Gathering — In book-binding, to collect one copy of each signature to make the complete book. The folded sheets or signatures are placed in piles in their proper order, each pile containing the copies of one signature; one copy is taken from each pile, beginning with the first signature and ending with the last. This operation is repeated, each round of the piles making a complete book. This work is usually performed by girls, who pass up and down beside a long table to collect the sheets. In some establishments large editions are gathered from a moving table or platform upon which the signatures are placed, thus enabling a person to gather while seated or standing still.

Gauge—A piece of wood or metal (reglet, slug, or brass rule) used to determine the length of pages, etc. Also a piece of wood, cardboard, or metal (usually a quadrat) pasted on the tympan-sheet of a job press as a guide to feed the sheets to.

Gauge Pin—A flat pin inserted in the tympan sheet, as a feeding guide; made in many varieties.

Gelatine Printing—Gelatine is a refined form of glue and is used for many purposes in printing. It is the basis of the process known as the hektograph, by which anything written with copying ink, after being transferred to a sheet of gelatine, may be

again transferred from the gelatine to sheets of blank paper. Several processes of photo-gelatine printing, known as albertype, collotype, heliotype, etc., are very much like lithography, a coating of gelatine upon a sheet of glass or metal being used instead of the lithographic stone. The gelatine method is also used to produce a plate which may be moulded and the mould used to produce an electrotype of the subject in relief. By etching through a gelatine film on copper an intaglio plate is made, which is known as a photo-gravure. See *Hektograph*, *Heliotype*, *Photo-gravure*, *Process Engraving*.

Genealogical Work—This class of printing differs from ordinary book work because of the excessive use of abbreviations, peculiar indentions, different sizes of types, use of capitals, italics, etc. It often requires the re-printing of old documents, with old-time spelling and phraseology, and usually has pages of difficult pedigree charts.

Geometrical Signs—See *Mathematical Signs*.

Get In or Take In—To thin space in setting type, so that a word or syllable may come into the line. To *drive out* is to wide space. A general rule for compositors, when lines are set solid, is to get in a word if possible by thin spacing; if lines are wide-leaded, to *drive out*—that is, space wider than the regulation three-to-em space.

Glazed Board — The sheets of mill-board used by binders, and for packing tympans and printing cylinders, etc.

Glazed Paper — A paper with hard, glossy surface, usually finished on one side only, used for box labels, etc.

Gloss Ink—An ink containing extra quantity of varnish which gives it a glossy appearance when dry; much used for printing book and pamphlet covers.

Glossary — A dictionary of difficult, obscure, or antiquated terms, or words of special meaning, in any language, book, or calling.

Glycerine — A sweet, viscid liquid, oily, non-crystalizing, and colorless. It is used in many ways in printing rooms. Glycerine rubbed on the tympan sheet is better than common oil to prevent offset in backing up a sheet. Glycerine is used in the composition of rollers, and, when rubbed on their surface, is useful in reviving old rollers. It is also used to thin out and render workable many kinds of inks.

Gold Bronze — A fine powder used in printing; it is dusted on after the sheet has been printed with sizing. See *Bronzing*.

Gold Ink — Ink of golden color, used as a cheap substitute for gold bronze and sizing; it gives very little lustre, except when printed on glossy paper.

Good Color— Printing neither too black nor too light.

Gold Leaf — Very thin leaves of beaten gold, sometimes used in typography, but mostly for book covers and edges. The ancient Egyptians hammered out gold leaf between pieces of the intestines of an ox, while the Greeks and Romans employed parchment. This process is still adhered to, as no other has been invented to supersede hand work in beating the leaf to the required thinness. The beaten leaves are laid in books, the paper of which is rubbed with chalk to prevent the leaf from sticking to it. When gold leaf is used for book covers, a dried glaire is first put on the cloth, the leaf laid on and the impression made with a hot die or a type-form.

Golden Type—The name given by William Morris to a style of type designed by him in 1891, based on the roman type of Nicholas Jenson, an early Venetian printer. Familiar now as **Jenson Oldstyle** and by other names.

Golding Jobber—A platen job press made in several sizes, from 8 x 12 inches to 15 x 21 inches, by Golding & Co. of Boston.

Gordon Press — A popular platen press invented by George P. Gordon about 1858. Several styles are made by different manufacturers, based on the principle of the old Gordon — that is, automatic closing and opening of bed and platen, rollers moving up and down over the form, carrying ink from a revolving disc above, etc.

Good Copy — When it is plain, and carefully prepared, so as to give the compositor little or no trouble.

Goose — The abbreviation for wayzgoose, a festival given to their workmen by master-printers in England.

Gothic — Type-founders and printers in this country use this word to describe a style of type-face of the plainest and simplest form, having no serifs or other useless strokes, and with lines of unvarying thickness: **GOTHIC TYPES.** English printers call this style of type sans-serif. Among bibliographers and scholars the name gothic is applied to certain old style forms of black-letter, which is the true gothic character. The gothic types of this country are made in many varieties, described as heavy, or black, light, extended, condensed, extra condensed, italic or sloping, as well as by other distinctive names. They are used very largely in newspaper and other advertising, and in commercial and poster printing, but are not acceptable for book work.

Great Primer — A size of type nearly equivalent to 18-point; two-line bourgeois.

Green—An inking roller is said to be green when it is new; if not properly seasoned it may remain green, and in warm, damp weather will cause trouble by not taking up and distributing the ink properly.

Grippers—On job presses, the iron fingers attached to the platen to keep the sheet in place and take it off the type after the impression; on cylinders, the apparatus which grips and carries the sheet around to the impression.

Gripper Margin—The edge of a sheet that is caught by the grippers on a cylinder press. The gripper margin of the form is that nearest the grippers when they carry the sheet around to be printed.

Ground Block—A block used to print a tint or flat color, upon which other colors are afterward to be printed; a tint-block.

Grover Composing Stick—Made of steel, having the knee held in place by a clamp, instead of a screw, which secures it to the back.

Guards or Guard-lines—Strips of metal, type-high or a little higher, placed around type forms which are to be moulded for electrotyping; sometimes called bearers. They serve to protect the edges of the plate, as well as aid in securing a mould of even depth on the edge and center of the form. In book-binding, guards are strips of paper inserted in the backs of books for plates to be pasted on.

Guide—An arrangement for holding the sheet of copy on the upper case. It may be a simple piece of reglet or slug held by a string, or a more elaborate affair such

as is furnished by supply houses. It is useful when the sheet of copy is large, with much small writing or figures in tabular form, as it helps to indicate, without loss of time, the place at which the compositor is setting, but for ordinary copy a guide is liable to be more bothersome than useful. Feed guides or gauges, to place the sheets against, are fastened on the tympan of job presses; cylinder presses that print single sheets also have guides for feeding sheets to, so that the printing may be in exactly the same place on each sheet.

Gummed Paper — Made in various colors, but usually of strong quality, for labels, etc. It is gummed in large sheets before printing, and if not skillfully handled is very troublesome to feed into the press, because of its tendency to curl up when exposed to air.

Guillemets—French quotation marks. They differ from those used in English or German, their form being like this: « »

Gutter — The blank space which gives the back, or binding, margin of a book sheet. Each page of a book or pamphlet has a top margin, an outside margin, a foot margin, and back or gutter margin. See *Imposition*.

Guttersnipes — Small hand-bills and other advertisements pasted on the pavements, along the edges of gutters, etc. A method of advertising not now common.

Gutter Sticks—The furniture used to make the back margins of book pages.

H — In type-founding the capital H and lower-case m are first made to line at the bottom, and the position of all other characters fixed by these standards — the H determining the height of all tall letters, and the m the height of the body-part of the small letters. For this reason, type-founders require a sample H and m of fonts for which extra letters or sorts are ordered. The adoption of the new uniform lining systems, known as American Line, Standard Line, Uniform Line, etc., by which all type-faces of certain classes on the same body are cast to line exactly with each other, makes this requirement unnecessary when ordering sorts of these "lining" faces.

Hair Spaces—Very thin spaces, less than the five-to-em in the smaller sizes of types; for large sizes pieces of leads and cards are used for hair spaces. Copper and brass spaces, one-half point and one point in thickness, are made for sizes of 12-point and larger. Hair spaces greatly facilitate the work of letter-spacing and justifying, but they are sparingly provided in the average composing room, because very few compositors will care for them properly. See *Copper Thin Spaces*.

Hair-line — Used to describe any very fine or delicate line in type, brass rule, or engraving; commonly applied to any character which is very light throughout.

Half Case — A type case half the regular length, or about 16½ inches.

Half Chase — One of a pair of chases which are to be used together, as on the flat bed of a cylinder press. They are usually made with the sides which lay together thinner and a little higher than the other parts. Sometimes one chase will have projecting pins which fit into notches of its mate.

Half-diamond Indention — When successive lines are indented at both ends, each one being shorter than the preceding line, like this paragraph; common in title-pages.

Half-title — The title put at the head of the first chapter of a book; now often applied to the bastard title, or brief title which precedes the main title page of a book.

Halftone — An engraved plate made by photographic and chemical methods, in which the surface or printing part is composed of a series of fine dots. A halftone process plate is made by photographing the picture through a screen interposed between the copy and sensitive plate in a camera. This screen is placed near the plate and, the light passing through it, the object on the negative is broken up

into a mass of minute squares, or dots, which are larger or smaller as the corresponding parts of the copy are darker or lighter. This screened negative is then placed beside a polished, sensitized copper plate, and after exposure to light it is further developed and manipulated so as to protect the dots from the action of the acid with which it is afterward etched. After the etching is completed the plate is trimmed and mounted type-high.

Half Sheet — When a book form is imposed so that all the pages of a sheet are in one form; an impression being made, the sheet is turned and another impression made on the back, thus making two copies on one sheet; when cut in two, each half sheet contains an impression of all the pages in the form. This is the most common method of imposition, as it permits of more certain register and errors in imposition or margins are more readily discovered.

Hamilton Job Case—A full-size type case for holding only capitals, points, and figures, in which the boxes are enlarged to twice the usual width; made by the Hamilton Manufacturing Co. of Wisconsin.

Handbill—A small printed advertisement or notice, usually on common news or book paper, and intended to be passed to persons on the street, left at doors, or posted on walls.

Hand—The index mark ☞ is sometimes so called.

Handful— A quantity of type which is taken in the hand at one time without being tied with a cord, when distributing or making up; usually three or four inches of a column or small page.

Hand-inker—A hand roller for inking type. When printing was done chiefly on hand-presses many contrivances were invented whereby the inking could be done by the one man who operated the press, in order to dispense with the second man or boy. These contrivances were usually frames or stands placed on the side opposite the pressman, and held two or more rollers with ink distributed upon them which could be pulled back and forth across the form; later devices enabled them to be worked automatically, as when the bed of the press was rolled out a pulley was wound up which caused the roller to pass over the form when the frisket was raised.

Hand Letters—Types fixed on handles, to be stamped by hand, used by book binders; they are usually made of brass, because they must be heated for gold stamping.

Hanging Indention—That form of paragraph which is set with the first line full length and subsequent lines all indented, as in these pages; usually employed in dictionaries, catalogues, price-lists, etc.

Hand-made Paper—That which is made entirely by hand, in distinction from paper made by machinery. The slow and tedious process of making paper by hand renders it too expensive for ordinary use, and it is chiefly employed for choice work in small quantities. It is made in smaller sheets than the machine-made product, is of stronger quality and rougher surface, and has deckle edges.

Hand-press—That style of press upon which all or nearly all the operations are performed by manual labor. It was the first form of the printing press, and consisted of an upright wooden frame between the posts of which a plane surface (the bed) with the type-form upon it, was placed; above the bed was another flat surface, face down, which was operated by a screw or contrivance of levers, by which the impression was made upon the face of the type. The early hand-press was made entirely of wood; later a stone was used for the bed, and the bed was made to move in and out from under the platen, or impression surface, to facilitate inking and putting on and taking off the sheets. About 1800 Lord Stanhope, an Englishman, made several improvements in the hand-press, substituting iron for wood and arranging a series of levers by which a stronger impression could be made with less labor. Since then many varieties of

hand-presses have been made, and several styles of iron machines are in common use for pulling proofs and similar work in printing offices everywhere.

Harris Rule Case — A popular style of case for holding small assortments of labor-saving brass rules; it is quarter the size of a regular case, and four of them will set into a blank case. Because of its small size it is convenient to carry from place to place or to lay on the compositor's stand while he is using it.

Hard Packing—In making ready a form on the press, the sheets of paper and cardboard which cover the platen or cylinder may be hard or soft according to the nature of the work. Thus engravings, new type faces, etc., on smooth, dry paper are printed from hard packing in order to give sharp, clear impressions. Soft packing is employed for forms containing a mixture of old, worn type, stereotypes, and for work which must be hurried, like newspapers and posters. See *Making Ready*.

Hard Paper—That which has a hard, smooth surface, mostly writing paper, which, because of its sizing, is harder to print upon than the ordinary book paper; it requires a special ink and a stronger impression.

Head-band—The piece of silk or cotton used to give ornamental finish at the top and bottom of the back of a bound book.

Head—The top of a page or book, or the title of an article in a newspaper, etc.

Head and Tail—The top and bottom of a book.

Heading Chase—A long, narrow chase used for locking up blank-book headings and similar work.

Head-line—The top-line or title of a newspaper or book page; the heading of a notice or article.

Head-piece—The ornamental panel or picture placed at the top of a page in a book, usually at the beginnings of chapters, where the open space left by the sinking of the heading is utilized for decoration. Head-pieces, tail-pieces and initials are used to give variety to the text of plain type pages; stock patterns and conventionalized designs are common, although many works are now decorated with special designs appropriate for the text. The most pleasing effects are obtained when the head-pieces, initials, and tail-pieces of a book are uniform in style and not too prominent or obtrusive.

Head of the Sheet—In presswork, the edge of the sheet which is fed to the lower guides. The corresponding part of the form is the *head of the form*.

Heap—This term is often applied to the quantity of white paper given at one time to the pressman to print.

Hectograph or Hektograph — A copying process for multiplying written or printed copies by means of a sheet of gelatine. The writing is done on a sheet of paper with copying ink; this sheet is then laid face down on the gelatine, which receives the ink; when fresh sheets are pressed upon the gelatine thus treated the writing is transferred to them, and copies are thus duplicated till the ink is exhausted; twenty to a hundred copies may be made from one prepared pad. See *Gelatine Printing*.

Height-to-Paper—The height of a type compared with its mates. Type-founders in this country have a standard for height-to-paper which is $^{92}/_{100}$ of an inch; but many causes interfere, during manufacture and afterward, which make variations from this standard quite common. Types made at different times, or from different moulds and matrices, or because of differences of temperature at casting, will often show inequalities in height; types which have been copper-faced or nickeled will be slightly higher because of the additional film on the original face; old or worn types when used with new will be lower. These and other causes tend to make the face of a form composed of many kinds of types and engravings more or less uneven and add greatly to the work of making ready on the press. See *Making Ready*.

Heliogravure—A French process of photographing and etching pictures on copper; a print made by this method.

Heliotype Printing—A method of printing from a gelatine film upon which the picture has been transferred by photography. From an ordinary negative is made a positive from which a direct impression in ink can be made on a printing press. See *Gelatine Printing*.

Hell or Hell-box—The box or receptacle into which broken or discarded type is thrown; sometimes the "old shoe" or "boot."

Hempel Quoin—A metal quoin used for locking up forms for printing. It consists of two wedge-shaped pieces which fit into each other so that when they are moved laterally by means of a key the thickness of the quoin is increased. It was invented by Henry A. Hempel about 1878, and has since been generally used in all American printing offices.

Hens—The end-pieces of the brace; ⌐ ¬ ⌐ ⌐ ¬; the middle-piece is the cock.

Hiatus—An omission or defect in written or printed text, where some part is lost or effaced.

Hieroglyphic—A sacred character; originally, the picture-writing of ancient Egyptian priests. In modern use, any character which has, or is supposed to have, a hidden or mysterious meaning.

High-to-line—When a **letter** or word is above the line of its fellows; like **this** it is *low-to-line*.

High Spaces, Quads, and Leads—Used in type composition when it is to be electrotyped; they are nearly as high as the shoulder of the type and thus leave no small holes (as in the case of ordinary low spaces and quads) into which the moulding wax finds its way to render good moulding difficult. Low spaces, quads, and leads are necessary when the type is to be printed from direct, and much electrotyping is done from forms thus set; but for fonts of type which are to be used exclusively for electrotyping, such as books and periodicals of large circulation, high spaces and leads should be used.

Hoe Press—Presses made by the celebrated New York firm of press makers established by Robert Hoe, an Englishman who came to this country in 1803. The first kinds were hand-presses, then cylinder presses, which were developed to a marvelous degree and made in a great variety of styles, from the single cylinder form to the modern web perfecting machines employed on metropolitan newspapers.

Hollow Quads—Large sizes are sometimes cast with hollow parts to make them lighter and economize the metal. See *Quotation Furniture*.

Hook Up—The end of a line that is turned over and bracketed into the end of the line above, as in hymn-books and poetry set in narrow measure.

Horn Book—A contrivance which existed before the invention of printing and which was designed to provide an indestructible school-book for boys. The horn-book was a small broadside made up of the alphabet at the top, in capitals and small letters, a list of the vowels, a number of the commonest syllables, and the Lord's Prayer. This single leaf was set in a wooden frame, fashioned with a handle at the bottom like a lady's hand-glass. In the handle there was a hole for a string so that the horn-book could be slung to the boy's belt. Covering the printed sheet and protecting it from the boy's destructive finger-nails, there was a plate of horn shaved down thin enough to make it perfectly transparent. Sometimes the printed sheet was simply pasted on the plate of horn. (*American Dictionary of Printing and Bookmaking.*)

Horse — An inclined table near the press upon which the old-time hand-pressman placed the white paper to be printed.

Horsing—To charge for work before it is done. A journeyman doing work for which he has already been paid is working for a *dead horse*. In book rooms, to read proof without a copy-holder is *horsing it*.

Hot Pressing — A method of pressing out printed sheets by means of hot plates placed with the press-boards in a powerful standing press. It gave a polish to paper which was printed while damp and which came out with a dull finish when cold pressed. This treatment is now rarely given to printed sheets, as hard packing, modern presses, careful make-ready, and dry, calendered paper make it unnecessary. Hot rolling is done by means of heated cylinders.

Hound's-teeth—Irregular lines and gaps of white space which may be traced between the words of several lines in a page. In careful composition these white rivers, when distinct, are objectionable, and may often be avoided by a little re-spacing of one or more lines.

Huber Press—Several styles of this cylinder press are made — a single cylinder, a two-color, and a perfecting press — all built upon the two-revolution principle. In the two-color machine the sheet is printed in one color by one cylinder and passed to the second cylinder, which has a separate form and inking apparatus, for the second color; in this way type may be printed with one grade or color of ink, and a page-border or a halftone in a different ink on the same page, at a single handling of the sheet. In the perfecting machine the sheet passes between a cylin-

der and its type-form on a flat bed for each printing. An apparatus is provided to prevent the set-off of the fresh ink from the first impression while printing the second side. The makers of these presses have, because of recent improvements, now named them Huber-Hodgman Block-bearing Presses.

Humanistic — The name given to a style of type designed by William Dana Orcutt and used at the University Press, Cambridge, Mass. The type is based upon the highest form of hand lettering ever attained, as shown in the fifteenth century Humanistic manuscripts in Florence. The principle on which the font is cut differs radically from that shown in regular modern type — namely, the ascending letters are short and the descending letters long. The designs of the letters closely follow those of the hand work, there being several cuts of the same letter, yet avoiding the inevitable slight irregularity of such work. The letters have a peculiar merit of retaining their individuality, considered one by one, yet sinking this in becoming parts of a word which seems as complete in itself as a a logotype. The type is used exclusively for special editions of Humanistic volumes.

Hydraulic Press—A powerful standing press in which the power is communicated very slowly to a piston by means of water injected by a force pump into a large cylin-

der in which the piston moves. This style of standing press is used in large book printing rooms, binderies, and other places where great and steady pressure is required. See *Dry Pressing*, *Standing Press*.

Hyphen—The short dash used at the end of a line when a word is divided and part is carried over to the next line. It is also used to join compounded words. A number of hyphens spaced apart with quads was formerly used for leaders in indexes, price-lists, etc., - - - - - Hyphens are not now approved for this purpose, but periods are used instead. . . . In ordinary fonts the hyphen is of the width of a four-to-em or three-to-em space, and should not be confused with the en-dash. See *Dashes*.

I—I and J, with their small forms i and j, were formerly regarded as the same character, the I or i being used in many words where J or j are now employed. I being the simplest form of any written or printed character, it is often employed to represent the first of any number. In the Roman numerals I represents one, and in our common figures the I slightly modified as to serifs is the figure 1. See *J*.

Illuminating—The decoration of book-pages and manuscripts with colors, especially in several colors and gilding. Initial letters, borders, head-pieces, and pictures, were in early times the subjects of elaborate

and costly decoration in brilliant colors. When books were rarer and all work was done by hand, single volumes were illuminated and bound in sumptuous manner for wealthy patrons.

Imperial — A size of writing paper 22 x 30 or 23 x 31 inches; printing paper, 22 x 32 inches; drawing paper, 21 x 30 inches.

Imperial Press — A platen jobbing press recently introduced, made in Boston. It has a moving platen and a stationary perpendicular bed, surmounted with an ink disk and fountain, as in several other styles of job presses. Its distinctive feature is a second ink fountain with distributing rollers below the bed, from which the form-rollers receive a fresh supply of ink before they start back on their upward motion. This arrangement, with three form-rollers, gives additional inking facility over the ordinary job press, which is desirable for printing illustrations and forms requiring a good supply of ink. The name Imperial was also given to a hand-press used in England many years ago.

Imposing Stone or Table — The table or flat surface upon which forms are locked up for the press. Formerly this was a polished stone set into the top of a wooden frame — and called simply a *stone*. Large composing rooms with modern equipment now have polished iron tables for imposing purposes. See *Stone-work*.

Imposition — The operation of laying a number of pages or parts of a form in such a manner that, when the sheet is printed and folded, the pages or parts will follow each other in consecutive order with proper margins. This part of the printer's work requires experience, skill, precision, and the ability to calculate closely. A printed sheet may contain a single page printed on one side, or two pages, one on each side; or it may, after printing, be folded once and have three printed pages and one blank, or all four pages printed; or it may be intended to fold twice into three leaves with six pages, or into four leaves with eight pages; and so on, with larger sheets and additional foldings. All these different forms require the pages placed in a different plan with relation to each other, as one may observe by folding sheets of blank paper and marking the blank pages in consecutive order, and then opening out the sheet. There are also variations in schemes of imposition required because of size or shape of paper, or the kind of press to be used, or whether one form will print one side of the sheet and the sheet turned to print the other side with the same form, or whether each side is to be printed with a separate form; and also, in sheets of two or more folds, the variations that may be required because of difference in the manner of fold-

ing the sheet. With sheets of few pages, like those mentioned, the work of imposition is comparatively simple; but when many pages are printed at one time on large sheets, and the sheets cut into sections after printing, each section to be folded separately, the problem becomes more intricate and the utmost care and study is needed to avoid mistakes and loss of time. Sheets folded by hand may have to be imposed in one way; the same pages, when the folding is intended to be done on a folding machine, must be imposed differently. Large sheets of thin paper may permit a number of folds in one sheet and the paper will fold true and smooth; thick, stiff paper may require imposition that will allow the large printed sheet to be cut apart and each part folded separately. Imposition includes also the preparation of duplicate forms to be registered to each other for printing in two or more colors. The making of required margins at the sides and top and bottom of each page, as well as the proper marking of signatures, the placing of register points, and other matters necessary to prepare a form for printing, come under the head of imposition. Diagrams of imposition, with particular explanations, etc., may be found in many text-books on printing and from time to time in the trade journals.

Impression—The pressure given by a form of type or a plate to the sheet of paper; also, the printed sheet—in the latter sense usually applied to engravings.

Impression Screws—Those under the corners of the platen of a job press, by which the impression is regulated. On a cylinder press the impression is similarly regulated by screws below and above the journal boxes which sustain the cylinder.

Impression Throw-off—A device now made a part of nearly all job presses, whereby the pressman or feeder can, without stopping the press, move the platen and bed apart slightly, so as to avoid making an impression of the form, in case of failure to get a sheet in place properly. On cylinder presses, it is an impression *trip*, operated by the feeder's foot, and serves to raise the printing cylinder slightly while the form passes under it.

Impression Sheets—Those placed around the cylinder or on the tympan, upon which an impression is printed in the operation of making ready on the press.

Imprint—The name, with or without address, of the printer on his work; usually placed inconspicuously, and it may be in plain, small type, or in the form of a trade-mark or significant device.

In the Metal—That is, in type—as, to correct in the metal, or to revise in the metal, without taking a proof.

Incunabula or Cunabula—A Latin term signifying *in the cradle.* It is applied by bibliographers to books printed before the year 1500—the beginnings of printed literature. These books are much sought for and catalogues and treatises upon them are numerous. Most of them are in Latin, and they are preserved in European libraries, although a number of copies may be found in this country.

Indelible Ink—Used mostly for marking purposes, as on cotton or cloth, which when properly treated cannot be effaced.

Indent—To put a blank before or after words in a line, as at the beginning of a paragraph.

Indention or Indentation—Common paragraph indention is to begin the first line further in from the margin than the other lines. The usual indention of paragraphs is one em-quad of its own size at the beginning of the first line. If the lines are of more than average length, this indention is increased to one and a half, two, or more ems. Thus, for any measure from twelve to twenty pica ems in 10-point, 11-point, or 12-point, one em of the type is sufficient; but for 5-point or 6-point type in a measure of eighteen pica ems, two ems of its own body will be needed. As a rule, wide-leaded and wide-spaced lines will need more indention than close-spaced, solid matter. The indention should be enough to indicate the paragraph clearly,

but not so much as to make distinction unduly conspicuous. See *Hanging Indention*, *Half-diamond Indention*, *Diagonal Indention*, *Motto Indention*.

Index—A table for facilitating reference to topics, names, etc., in a book, arranged in alphabetic order. It is usually placed at the end of a book, but is sometimes in the first part. An index differs from a table of contents which is always in the front of the book and states the chapters or subjects in the order in which they occur. Also the character ☞, called by compositors the hand or fist. It is furnished with ordinary roman fonts, being one of the old-style reference marks. In some fonts right and left characters are furnished, and it is now made in a variety of forms for advertising, etc.

Index Expurgatorius — A list of prohibited books.

India Ink—A deep black writing and drawing ink, used especially in drawings to be photographed for engraving. It is made of lampblack and size, or glue, and received its name because it was first obtained from China through India.

India Paper—Often used by engravers for fine impressions. It has a fine silky texture and takes ink nicely. It is imported and is made from hemp, cotton, mulberry bark, bamboo, and silkworm cocoons. *India proofs* are made on india paper.

India-rubber Blanket—A sheet of cloth faced with rubber, used to cover the printing cylinder. It is used where quick make-ready is required on common work, like newspapers, and for old types or electros.

Inkoleum—A colorless reducer for printing inks, designed to make stiff or cold inks easier to work.

Inferior Figures or Letters—Small figures or letters cast on the lower part of type, below the line of the usual face, thus: $_{1\ 2\ 3}$ or $_{a\ b\ c}$; used in chemical and scientific formulas. Superiors are above the line $^{1\ 2\ 3\ a\ b}$.

Initial—The first letter, as of a name, etc. In printing, the word is usually applied to a large letter, plain or ornamental, which is inserted at the beginning of a paragraph. In this use it may be a two-line initial, three-line, etc., according to the number of lines of text that it covers. Before the invention of printing, and since, the initial letter has been considered the feature of a page that could be properly used for decorative purposes. Early manuscripts show many elaborate, beautifully colored initials. These were done by hand by scribes and illuminators, and early printers often left blank spaces in their printed pages for these letters to be drawn in later. In some cases a small letter was printed in the middle of a large space as a guide to the artist. These small letters were covered

with the larger letter, but sometimes they were left untouched and the decoration drawn around them to fill the space. Later initials were cut on wood or cast in metal and printed with the text.

Ink—The colored fluid or substance used in writing, printing, stamping, etc. Common black writing ink is a chemical dye generally made of nutgalls, copperas, and gum arabic. The coloring matter is gallotannate of iron; logwood is used to deepen and improve the color, and many other ingredients are sometimes used. Printing ink is a mixture of boiled oil and black or colored pigments. Unlike writing ink, which is fluid, printing ink is of the consistency of a thick paint. Linseed and nut oils are used for the finer printing inks, while rosin is used for the cheaper grades. See *Aniline Colors*, *Copying Ink*, *Invisible Ink*.

Ink Brayer—See *Brayer*.

Ink Fountain—The receptacle in which ink is placed on a press, and from which distributing rollers take the ink automatically and spread it over the printing form. The front of the fountain consists of a polished steel roller against which the ink lays and by the turning of which the ink is worked out and taken up by another roller of softer composition. The supply of ink is regulated by thumb screws pressing behind a knife or straight-edge against the fountain roller.

Ink Knife—For handling printing ink, as in taking from can or barrel; it has a handle and usually a blade with a square end. An ink slice is an iron implement for lifting or scraping up ink.

Invisible or Sympathetic Ink—A writing fluid which remains invisible on paper until developed by exposure to heat, strong light, or some chemical reaction.

Ink Slinger—A slang term for a professional writer, especially one who writes recklessly or verbosely.

Ink Balls—Employed before the invention of rollers about seventy-five years ago, to distribute ink on the type-form. They consisted of round cushions stuffed with wool or similar material, each with a handle, and were used in pairs.

Ink Up—To lay on the rollers and distribute sufficient ink for any purpose.

Inner Form—When two forms are required to print a sheet, one will have the pages for the inside, and the other those for the outside; on an eight page sheet, in two forms, the inner form will have pages 2, 3, 6, 7.

Inset—A sheet or folded section placed within another.

Insert—A separate sheet, usually of heavier or different quality of stock and specially printed, bound into a magazine, pamphlet, etc. An illustration inserted in a book is termed a plate by bibliographers.

Inside Quires—The good quires of a ream of folded paper; the outside quires of a package are liable to show more or less injury from handling, rope marks, etc.

Intaglio—Engraving incised or cut into the surface of wood or metal, in distinction from engraving in relief. The lines to be printed are filled with ink and the paper pressed in to take up the ink. See *Copper-plate Engraving*, *Steel Engraving*.

Interleave — To place extra sheets, usually blank, between the printed sheets, as to insert sheets of blotting paper between the leaves of a blank book. When a printing form requires a great quanity of ink, the sheets as they come from the press are often interleaved to prevent the ink set-off from one sheet to another. This operation is oftener called slip-sheeting. and the sheets used slip-sheets or set-off sheets.

Interlinear Matter—Lines of type, as of explanation or translation, placed between the main or text lines of a work.

Introduction—A preliminary paragraph, page or chapter in a book, etc., usually of an explanatory nature. See *Preface*.

Interrogation Mark [?]—Used at the end of a direct question. When this mark is cast on a thin body, a thin space should be used to separate it from the preceding word.

Inverted Commas [“]—Used at the beginning of a quotation. See *Quote-Marks*.

Italic — The first italic types were made by Aldus Manutius, the famous Italian printer of the sixteenth century, who printed many books with it entirely. Originally only the lower-case letters were italic, the capitals being upright. Although italic was first used to print the whole text of books, it has now only occasional uses, such as for words requiring emphasis, for circulars, extracts, bits of poetry, sub-headings, etc., and sometimes for prefaces and introductory paragraphs. Its use in roman text for names of books, plays, vessels, newspapers, etc., and for words from foreign languages, is not now so common as it was fifteen years ago. On account of the numerous kerned letters, which break off easily and make its use troublesome and expensive, italic is not popular for ordinary work and the modern practice is to employ it sparingly. Nearly all ordinary roman fonts, as well as many special styles of jobbing and display faces, now have their companion italics, which are of similar weight of face and on the same "line" as the roman. A single line drawn under a word or sentence in written copy is a direction to the compositor to use italic.

Italicize—To set words or sentences in italic; to emphasize.

Italic Case—A plan of type-case so arranged as to provide for a complete alphabet of capitals and one of lower-case letters, with

figures, points, spaces, etc. The arrangement is the same as the regular lower case condensed into two thirds of the size sideways, with the capitals in the other third-section as in the ordinary capital case. It is convenient to hold small fonts complete in a single case, and is made in a number of sizes.

Its Own Stock—That is, the stock upon which the work is to be finally printed, as distinguished from sheets used for proofs or trial impressions.

Ives Process—A method of photo-engraving.

J—This letter, as a distinct character of the alphabet, is comparatively modern (since about 1630), it being derived from the I. Its late introduction explains its position out of the regular alphabetic order in the printer's capital case. J and I (with their lower-case forms j and i) were originally identical and words beginning with these letters were classed together in dictionaries as late as 1800. The use of j for i is still observed in medical prescriptions, at the end of a series of numerals, like vj(six), viij (eight). The pronunciation of j in English may be represented by *dzh*, in French by *zh*, in German by *y*, and in Spanish by *h*.

Jeffing—To play at quadrats; that is, to throw quads like dice. Em quads are used, the nick side representing one and the other sides blanks. Jeffing is a very old custom.

Jenson—The name given to a well known style of type-face. The modern type was made by William Morris, who modelled it after the roman letters of Nicholas Jenson, a Venetian printer of the fifteenth century. Morris called his the "Golden" type, but it was introduced to American printers by the Dickinson Foundery branch of the American Type Founders Company as **Jenson Oldstyle.** Other varieties of the face have since been made—Jenson Bold, Jenson Italic, Jenson Condensed, etc., together with a series of ornaments and decorative initials.

Jet—The projection at the bottom of a type when it is first cast, being the metal which cools in the aperture of the mold. It is broken off and a groove made which forms the feet of the type.

Job—A piece of work; anything undertaken, or assumed to be done, whether of more or less importance.—*Webster's Dictionary.*

Jobber—A small rotary platen press for small work. Also, a job compositor.

Job Case—A type case with boxes for holding a complete small font (a job font) of type; in distinction from news or book cases, which are in pairs.

Job Compositor—One who does all or many varieties of work, as distinct from a book or newspaper hand.

Job Font—A small assortment of type of one style and size; commonly of type used for display and miscellaneous work. It contains capitals, lower-case letters, figures, points, etc., but no small capitals, and most job fonts do not now include the diphthongs Æ Œ æ œ. A job font contains a certain number of each character; a weight font contains a certain weight of each. Job fonts are now put up by type founders in two sections: one of capitals, figures, and points, the other of lower-case letters, with a small portion of points. See *Font.*

Job Galley—Made in many sizes, but shorter and wider than those used in newspaper and book work.

Job Press—A small press, commonly of the platen style, upon which small jobs are done.

Job Type—That used for miscellaneous work in small jobs, etc., usually in small quantities, in distinction from newspaper and book type.

Jog—To push or shake gently; that is, to push together sheets of paper, etc., into a compact pile. To jog up sheets that have been spread out after printing, that the ink may dry quickly, requires some skill and practice, in order to avoid breaking and crumpling the edges. A great deal of spoilage and untidy work may be prevented by allowing none but careful employees to do this part of the work.

Jogger—An arrangement attached to the delivery-board of a press, to keep the sheets in order as they are laid down by the fly, tape, or grippers. It consists of small movable uprights on two or three sides of the area where the sheet is delivered. These uprights move back and forth automatically as each sheet is laid down and thus keep the pile straight.

Jump His Case—To quit or neglect his work; to leave his case without notifying the foreman, or for a sub. to leave without notifying the regular compositor.

Justify—To make lines of type of exact length with their mates, so that they will lock up solidly. This may be done by spacing between or within words, or at the ends of lines. To space a line is to put proper spaces between words or letters. A line may be well justified, but badly spaced, and vice versa.

Justifiers—Very thin spaces, like copper-thin, etc., are sometimes called justifiers. In England, large quads or quotations are termed justifiers.

Keep Down—A direction to use capitals sparingly; to begin with small letters those words which might in other places be capitalized. In newspaper work the custom is is to keep down many words that would be kept up in pamphlet and job work.

Keep Standing— After type or forms have been used to print the number of impressions required, an order to "Keep standing" may be given, if there is probability that the forms may be needed again.

Keep Up—To use capitals freely; to capitalize words which might at other times begin with small letters.

Keep Up Style—To follow strictly the rules of the office in matters of capitalizing, punctuation, division of words, spelling, abbreviations, style of headings, etc.

Kerned Letters—Those which have a part of the face projecting over the body of the type, like the italic *f*, *y*, etc. In early roman fonts, now known as old-style, the top of the letter f projected over the body, so that when it was used before an l or i, as well as when two were used together, a thin space was needed to prevent the kern breaking off. To avoid this, the f was cast double, also with l and i, on the same type, thus giving the familiar ligatures fi, fl, ff, ffi, ffl, instead of the fi, fl, ffi, ffl, as they would appear in single types. Kerned letters are troublesome to the type-founder, on account of the extra care and expense in making, and they are a source of annoyance to the printer because of the breaking of the kerns. Modern type-founders endeavor to avoid kerned letters as much as possible, but they can not be entirely dispensed with, especially in italic fonts,

whose long sloping letters would leave wide gaps unless the types were made to overhang each other more or less.

Key (for mechanical quoins)—A T-shaped piece of steel with a pin at one of its points which fits into and operates the metal quoins used to lock up forms. A combination key is in the form of a Y and has two of its three points fitted for the two sizes of the Hempel quoin and the other point for the Wickersham quoin. A pressman's quoin-key is a right-angled lever of this shape ⌐, with the short arm fitted for the quoins. It is convenient for unlocking and locking quoins that may be in the form close under the cylinder of the press, where the regular key cannot be used.

Kidder Press—A printing machine invented by Wellington P. Kidder of Boston, and placed on the market about 1876. The first styles of the machine were somewhat similar to the Gordon press, with attachments for feeding the paper from a roll and cutting into sheets after printing, and for numbering, perforating, etc. Because of its self-feeding apparatus it could be run at a high speed and was profitable for work in long runs. Later, other styles of the machine were made, and since the retirement of Mr. Kidder the firm have built presses other than those invented by him, until now there are over thirty different styles of Kidder presses, flat-beds and rotaries of

various sizes. The factory and main office of the Kidder Press Company is at Dover, New Hampshire.

König Press—The first practical power printing machine; invented in 1811 by Freidrich König, a Saxon, who devoted his attention to constructing a press that would print by means of a cylinder. On November 28, 1814, the London *Times* announced the fact that the number issued on that day had been printed by machinery propelled by steam. The first suggestion of a cylinder press is due, nevertheless, to William Nicholson, an Englishman who in 1790 took out a patent for such a machine, but which was never acted on. Isaiah Thomas says that a Dr. Kinsley of Connecticut afterward produced a press varying somewhat from Nicholson's.

L—In the Roman numerals L signifies 50. The English mark for pound sterling £ is the same letter, the initial of the Latin word *libra*, pound. The commercial sign for pound weight, ℔ is from the same word.

Label Holder—For type cases, drawers, etc.; narrow strips of thin brass, tacked on the ends, and having the edges arranged so that a strip of card may be inserted and kept in place.

Labor-Saving—The term applied to rules, leads, metal and wood furniture, etc., that

is provided in assorted lengths. The sizes are commonly multiples of pica (12-point) or nonpareil (6-point). Material in graduated sizes saves labor, as well as the necessity for keeping on hand sizes that may be little used, because two or more small pieces may be combined to make a larger piece. Labor-saving material is indispensable in job work and it is employed to a great extent in printing-rooms of every kind; even in newspaper and book rooms, where leads, slugs, rules, and such material are needed mostly in a few special sizes, fonts of labor-saving material are convenient and economical for the unusual sizes that are sometimes called for. Dealers in printers' goods now furnish brass rules in various styles, leads, slugs, metal furniture, reglet, wood and steel furniture, etc., in labor-saving fonts, together with cases and racks for their proper storage.

Labor-Saving Rule— Brass rules cut in graduated lengths; the usual sizes are multiples of nonpareil (6-point) up to ten picas long, and multiples of pica (12-point) for longer sizes. The advantage of labor-saving rules is that. having an assortment, or font, of the shorter sizes they may be combined to make longer rules, thus saving material as well as the labor of cutting new lengths. Labor-saving rules are furnished in fonts, by weight, by the type-foundries and supply houses.

Laid Down—When the pages for a book or catalogue form are placed in proper order on the imposing stone, ready to have furniture fitted around them for locking up, they are laid down. A printed sheet reinforced by a piece of strong paper or thin cloth pasted on its back is, among bookmen, laid down.

Laid Paper — Having lines water-marked in it at equal distance apart, the lines being thin places made by the pressure of the wire screen during manufacture. It is customary to speak of paper being either laid or wove. These are misleading terms, probably originating not with the paper maker, but with the maker of the wire screen upon which hand-made paper is made. For a wove paper, the screen used is woven like cloth; but for a laid paper, the wires of the screen are laid in parallel columns. The laid paper is of earlier origin than the wove paper; in fact, it was not till the year 1750 that the wove screen was used.

Lake — Applied to colored printing inks, means that the pigment is made by absorbing animal, vegetable, or coal-tar coloring matter from an aqueous solution by means of a metallic base; briefly, an aniline dye precipitated on a transparent base. Lake colors are transparent colors, and are of many hues — crimson, green, olive, red, purple, yellow, etc.

Lanston Monotype — A type-casting machine which produces separate types set in lines of any length, up to sixty ems pica, spaced and justified; invented by Tolbert Lanston of Washington, D. C., and shown in operation 1889; made by the Lanston Monotype Machine Co. of Philadelphia. It is in two parts, viz., a key-board and a casting-machine. The function of the key-board section is to punch a series of holes in a moving strip of paper, which unwinds from one spool to another, passing under a series of punches in its journey. The punches are operated by pressing the keys on the key-board, the result of this operation being a roll of perforated paper ribbon. This ribbon is then taken to the casting-machine, which contains a pot for melted metal, a stationary mold for the size of type to be cast, and a matrix-plate. The matrix-plate is about five inches square, and has on its face a depressed image or matrix of each letter and character of the type-face. The perforated strip of paper, when fed to its place, controls the movement of the matrix-plate, so that the required letter is adjusted exactly in place over the mold, while the melted metal is squirted in to form the type. The type then moves away and takes its proper place in the line until the line is completed, when it is automatically moved out onto a galley. The key-board of the Lanston

Monotype, being an entirely separate machine, may be, and usually is, operated in any place away from the casting apparatus and work may be executed on it any time before casting. The perforated roll may be fed through any number of times to produce duplicate castings of the matter, the matrix-plate for different type-faces being changed for each if desired. In the casting of the line the proper spaces are cast with it, the spacing needed to justify the line being indicated on the perforated roll by the key-board operator.

Large-Paper Edition — A book printed with wider margins than usual. When two styles of a book are called for, one for ordinary circulation, and another on better grade of paper and perhaps in better binding, it is common to increase the margins for the more expensive edition. This makes it necessary to change the furniture in the forms, or even to impose it over again for a different size of paper.

Law Italic—This name was given to a broad-faced italic often used in law blanks and similar work, and is sometimes termed *Caledonian Italic*. The name also now given to an italic of somewhat different style, known as *Law Italic No. 522*.

Law Printing — Law printing is a very distinct class of work and is done mostly in offices which have facilities for properly

handling it and where compositors and proofreaders have become familiar with its peculiarities. Much of it consists of attorney's briefs, and records. The Superior courts of all States, as well as United States courts, require all cases coming before them to be in printed form with pages of specified sizes, and sometimes in specified sizes of type. Massachusetts Supreme Court work requires a page of the size of 10 x 8 inches; U. S. Circuit Court and U. S. Circuit Court of Appeals, size of page 11 x 7 inches; U. S. Supreme Court, and U. S. Patent Office, 9 x 6 inches, set in small pica (11-point) or larger. Usually only a small number of copies are printed, from fifty to a few hundred, and the work is done in a rush.

Lay of the Case—The plan or scheme of arrangement of the letters and other types in the compositor's case. As the boxes are hardly ever labelled, except in cases that are seldom used, like sort cases, and those for holding accents, signs, etc., it is necessary for one who works at them to memorize the location of each character of the font. "Learning the case" is the first duty of the beginner, and he should do this thoroughly. In the main, the lay of the ordinary type-case is now pretty nearly the same as it has been for hundreds of years, and in all countries using the Roman and German letters there is

also a great similarity. In spite of the numerous changes that have been proposed and that many cases have been made and used with different plans which were obviously improvements on the usual arrangement, printers have adhered so closely to the ancient lay of the case that a present-day compositor would have little difficulty in setting type out of the case shown by Joseph Moxon in 1683. This applies only to the common book and news cases, which are in pairs, and not to cases for holding job type. Of these, there are several styles, used according to the requirements of the fonts to go into them.

Laying Type—Putting a new font of type in a case; sometimes termed laying cases, laying letter.

Leads (pronounced *leds*, not *leeds*) — Thin strips of soft metal used between lines of type to open them out more or less. They are made in different thicknesses, based on the point system. The most common thickness is the 2-point. They are of softer metal than the type, and are sometimes of brass for use in newspaper offices. Leads have also been made of zinc and tin, as well as vulcanite, but these are rare. See *Brasses*, *High Leads*.

Leaded Matter—Type lines separated with one or more leads, as distinguished from solid matter.

Lead Cutter—A small machine with a short, strong knife and a movable gauge, for cutting leads in any desired length. A common style of this machine has two knives, one in front for leads and another back of this for cutting brass rules. This is known as a lead-and-rule cutter. The lead knife and its opposing edge are parallel with each other and chop off the lead squarely, while the rule knife is at a slight angle with its opposing edge and cuts like a shear.

Leaders—Periods or dots placed at intervals in open lines to guide the eye across to figures or words at the ends, as in indexes, tables of contents, price-lists, etc. Leaders are cast by type founders in nearly all sizes from 5-point to 18-point, in several styles, such as fine-dot ....., two dots to an em . . . . . one dot to an em . . . . Cast leaders are usually on en, em, two-em, and three-em bodies. Brass leaders, not so easily worn or broken off, are now also furnished ; they are serviceable in commercial, legal, and other forms where blank spaces are to be filled in by writing after the work is printed (*the . . . . . day of . . . . . 190 . .*) These are made on 6-point, 8-point, 10-point, and 12-point bodies. For occasional use, a few lines of leaders may be readily composed with periods and quads or spaces. The first or chief editorial article of a newspaper is know as the leader.

Leader Boxes—Small special boxes for leaders; they may be laid upon the ordinary type case or attached to it temporarily. The usual style has separate compartments for en, em, two-em, and three-em leaders.

Leaf—A leaf of a book has two pages—the odd and even; this distinction between a leaf and a page should be kept in mind to avoid misunderstanding in speaking of the make-up of a book.

Leaflet—A small, thin pamphlet or folder; more strictly, a sheet folded into leaves but not stitched.

Lean—Said of type-matter that cannot be set quickly when done by piece-work, like solid matter without quads or open spaces. See *Fat*.

Lean Type—That is, a type with a narrow or condensed face. A lean or condensed face is usually reckoned as one in which the alphabet a to z inclusive in lower-case measures less than 12½ ems of its own body. A medium width is from 13 to 15 ems, and a fat type over 15 ems.

Leatherette and Leatheroid—An imitation of leather made of embossed paper or cloth, used for covers.

Ledger Paper—Heavy, strong writing paper of best quality, so named because it is used in ledgers and account books.

Legal Cap — A size of writing paper 12½ x 15½ or 12½ x 16 inches, flat or unfolded. Law cap is 12 x 15 or 12½ x 16 inches, folded the narrow way; this size, usually folded the long way, is foolscap. See *Foolscap*.

Legal Work—See *Law Printing*.

Let-in Note — More commonly termed cut-in note. See *Cut-in Note*.

Letter Boards — Movable shelves, under imposing tables, in racks, or elsewhere, upon which standing type forms are kept.

Letter Foundry — A type foundry.

Letterhead — A printed heading on writing paper. The most common sizes for business purposes are 10¾ x 8¼ to 11¾ x 9¼. These are more correctly half-letter sheets. Letter paper is usually cut from post folio, 17 x 22 inches, or packet folio, 19 x 24, cut in two, and consists of folded sheets. Other sizes are also used.

Letterpress Printing—Printing from type, as distinguished from lithographic work and that done from copperplate, steelplate and other engravings.

Letter Rack — A frame for holding cases or shelves for metal or wood type.

Lettering—The act of making or impressing letters; the letters so made.

Ligature—Two letters tied together and cast on the same body, like fi, ff, æ, œ, ſt, lb, etc.

Liberty Press — A platen jobbing machine in which the two parts, bed and platen, were hinged together at the bottom by an extension of the frames, and operated equally in making the impression. The inking rollers were placed between uprights and moved up and down but not sideways as the form and ink-disk passed under them. The press was invented by Frederick O. Degener of New York, and was first called the Degener press. Forty years ago this and the press invented by George P. Gordon, were the styles of jobbing machines in general use in this country. The Liberty press is now rarely seen.

Lift — When a form locks up so that it may be taken from the imposing stone without types dropping out, it lifts all right. A lift of paper is the quantity put on the feedboard of a press at one time. In England an elevator, for carrying forms, paper, etc., from one floor to another is a "lift."

Light-Face—A term used to describe a style of type having a face very much lighter than usual. LIGHT FACE GOTHIC.

Line Engraving — That style of engraving in which the effect is produced by lines or combinations of lines, in distinction from halftone and similar work in which the effects are obtained by masses of dots of larger or smaller dimensions. Copper and steel engravings made by direct in-

cision of the graver or the dry-point, wood engravings, as well as zinc etchings made from pen drawings, are classed as line engravings.

Line Formers — Curved pieces of brass, of the height of quads and leads, to hold curved lines of type. They were made in sets, with clasps or catches to hold the ends of the lines in place. The practice of setting curved lines of type is now nearly obsolete, and the use of line formers is rare nowadays.

Linen-Faced — Paper or cardboard having one or both sides faced with linen, to strengthen it; for book covers, children's books, etc.

Linen Paper — A thin, strong writing paper made mostly from linen rags. The common grades have a rough surface which, with the sizing, render it more difficult to print on than common print paper. Linen-finish is now popular, and many kinds of writing and cover papers, and also cardboard, are now made with a surface which imitates the weave of linen cloth.

Lining — The exact alignment horizontally of the bottoms of the letters of a font. In addition to the obvious requirement of making all the letters of a single font line with each other perfectly, American type-foundries have recently adopted the practice of casting type-faces on uniform lining

systems, variously known as American line (American Type Founders Co.), Standard line (Inland Type Foundry), Uniform line (Barnhart Brothers & Spindler), Universal line (Keystone Foundry), etc. The old-time practice was to cast the characters of a font so that they would line up only with their mates of the same size and style, without reference to any other style of type. When the compositor had occasion to use in one line two or more kinds of type of the same body, their faces were rarely on an even line **but** were **irregular** like **these** words. This made it necessary to use thin leads, cards or pieces of paper above and below different parts of the type-line in order to get the faces in line — an operation more or less troublesome and time-consuming. By the new lining system, all the faces made on any given size of body are cast to align with each other, as illustrated in this **line,** and **they** need no more adjustment than if they were all of the same font. The shoulder, or blank space at the bottom of the letter, increases gradually with the increase in the size of the type, so that a word of small type placed beside a larger size must have some spacing material below as well as above it, to keep it in its right place. The lining system provides also that this difference in alignment of different sizes of type is graduated by points, and when large and small sizes

are used in the same line the justification may be made by the use of point leads, making pieces of cards and paper unnecessary, and securing greater accuracy and solidity. All faces cast on the same size are not, however, cast on the same line, but are classified usually into three groups. One group embraces the great majority of faces, those having capitals and lowercase with normal descending letters, g j p y. Another group embraces fonts which consist of capitals only, or of letters having very short descenders, which may be made lower on the body. A third group includes those faces having very long descenders, and which must be high on the body, like script types.

A common class of lining types in jobbing work are the "combination series," or those having two or more sizes of face (usually fonts of capitals only) cast on one size of the body. Each face is made to line with the others on the same body, and all the faces may be readily used in combination, with a single size of spaces and quads. In order to readily distinguish one size of face from another, the nicks on the type of each are varied, a single nick for one face, two nicks for another, etc.

THESE ARE CALLED LINING TYPES
Four sizes of faces on 6-point body

MMM MMMM
Three sizes on 12-point Four sizes on 6-point

Lining Figures — That is, figures, usually of modern cut, that are cast so that they line together at the bottom, like 1234567890, in distinction from the old-style figures: 1234567890. Old-style figures in some fonts are now cast "on the line."

Lining Papers—The end papers, plain. colored, or marbled, inside the covers of a bound book; often called the end papers.

Linotype—See *Mergenthaler Linotype Machine*.

Linotype Column Rules—Are different than those used for ordinary type matter, being beveled so that the foot of the rule is thicker than the upper part, to hold the bottom of the slugs tightly.

Linotype Galley—As linotype slugs need only to be fastened at the foot of the galley, without a sidestick, for proving, the upper side of a linotype galley needs no ledge for holding side stick and quoins; it has instead, a movable clamp for holding the lines at the bottom of the column.

Linotype Planer—For planing down linotype slugs in a form. Used in the same manner as an ordinary planer. It has a corrugated rubber face for removing the burs which the machine often leaves on the face edge of the letters. A brush is sometimes used for this latter purpose.

Linotype Slug—A line of type or border in one piece, as is produced by the Mergenthaler Linotype.

Lithography — The process of printing from a flat stone. The design to be printed is drawn on a stone of peculiar quality with a specially-prepared ink, which clings to and dries on the surface. The surface is then subjected to the action of a weak acid that hardens the ink and slightly etches and lowers the unprotected parts. The process of printing first requires moistening the surface with water, which is absorbed by the blank parts and repelled by the hard, greasy lines of the design. Printing ink is then rolled over the stone and is, in turn, repelled by the wet parts but adheres to the ink-drawn design. The stone thus prepared is ready to make an impression on the sheet. It will thus be seen that the theory of lithographic printing is based upon the repulsion between grease and water. The production of the design depends upon chemical manipulation of the printing surface. It is the most flexible of all methods of printing. The invention of lithography is due to Alois Senefelder, an actor of Munich, and was the result of an accidental impression on a stone. He employed it in printing music and afterwards, with others, developed the art for commercial purposes. Like other methods of printing, lithographic work was formerly done on hand-presses, but since about 1860 power-presses have been employed and the progress of the

art has made rapid strides. Many new and improved processes and details of manipulation have been invented, both for preparing the design on the stone and for printing from the stone when ready. The preparation of the stone is done in several ways: by drawing on it with a special chalk or crayon; by line-drawing with pencil or pen with lithographic ink; by engraving through a thin film with diamond or steel points; by drawing or writing on prepared paper for transferring on stone; by transferring impressions taken from copper or steel plates, wood-cuts, or type; by photographing on stone; and by wash-drawing on stone. The lithographic hand-press has a movable bed, like that of the typographic hand-press. The impression is made, not with a platen, as for a type form, but with a straight-edge scraper at the press-head. The bed moves under this scraper, which extends across the width of the stone, and imparts great pressure on a small area at a time. The first operation, when printing, is to moisten the surface of the stone, so that the subsequent inking will leave ink only on the design. The inking roller is then passed over it; when sufficient ink has been applied, the sheet is laid on, the tympan laid down and the bed moved in under the scraper. The back of the tympan is of leather, zinc, or brass, and is slightly

oiled to allow the scraper to pass over it with as little side-resistance as possible. Lithographic rollers are not made of glue and molasses, like those used for typographic work, but consist of wooden or iron cores, wound with felt or flannel and covered with leather. Lithographic power presses are similar to cylinder presses employed for typographic work. A lithographic stone, after being used, may be ground down and have a fresh surface prepared for a new design. Thus, different thicknesses of stones must be used, and the distance between the bed and cylinder varies more than on a type-printing press. The cylinder is covered with a thick, elastic blanket or sheet of india rubber. The necessary moisture is applied to the face of the stone by rollers, which are at the opposite end of the press from the inking rollers. These damping rollers consist of iron cores, wound with several thicknesses of flannel and covered on the outside with a cotton or linen fabric. Chromo-lithography is the process by which one picture is printed from many stones in succession, each stone printing a different color. The comparative ease in making transfers of a design from one stone to another, and the greater degree of accuracy in registering a number of colors over each other, have especially adapted lithography to color work. Photo-

lithography is the process by which the design is placed on the stone by photography instead of by hand-drawing.

Litho — Brief for lithograph.

Lithotint —A kind of lithography by which the effect of a tinted drawing is produced, as if made with india ink. A picture made by this process.

Lithotype — A print and the process of producing an impression in ink from a gelatin film which has been chemically treated, the method being similar to lithography.

Literal Errors — In proofs, turned letters, transposed letters, wrong-font letters, and the like, as distinguished from errors of orthography, grammar, punctuation, etc.

Live Matter — Type composition or pages that have not yet been printed or moulded for electrotyping ; after it has been so used and there is no further need of it, it is *dead matter*, ready for distribution.

Locking Up—Tightening a form by means of quoins or screws, to prepare it for working on the press.

Locus Sigilli—Latin, *the place of the seal;* the initials [L. S.] placed before signatures in legal documents, etc. The type-foundries supply this in several styles for use in printed forms.

Logotype—Two or more letters, or a whole word, cast on one body.

Long Cross — The long cross-bar of a book or newspaper chase; when it has two, the short bar is the *short cross*.

Long Letters—The italic *f*, *j*, *Q*, or any letter so made that it covers the type body up and down. Also, vowels or other letters with a stroke over them to denote long pronunciation, as ā ē ī ō, etc.

Long Measure — A width of line longer than common for the size of type employed. A measure of twenty-five picas (12-point) would be normal for 12-point type ; for 6-point type it would be long.

Long Page — A page longer than the prescribed length. In making up book and catalogue work, it is customary to use a gauge by which pages may be made of uniform length : but it may often happen that, because of a table, cut, or some other feature, a long page here and there is unavoidable.

Long Primer—A size of type, in the old-style names, between bourgeois and small pica; approximately equal to 10-point.

Long S— The old-style roman lower-case ſ now obsolete, except in reprints or imitations of old-style work. It is scarcely distinguished from the f, the only difference being the omission of the cross-tick on the right side of the upright stem.

Long Twelves—A plan of imposition in which the pages of a 12mo are laid down side by side in two rows of six pages each.

Low Case — Case with little type in it. A case is said to be "empty" when important boxes contain no letters.

Low or Low-to-Paper — Said of a type, cut, electro, or any part thereof, when its face does not come up to the exact height of the balance of the form. Very low parts in a printing form should be brought up from below by means of underlays, in order that they may be properly inked when the rollers pass over. See *Height-to-Paper*.

Low Spaces and Quads—Those in most common use, distinguished from high spaces and quads used with type to be moulded for electrotyping. See *High Spaces, Quads, and Leads*.

Low-Line or Low-to-Line—See *High-to-Line*.

Lower Case — That is, the lower case of the usual pair as they are on the compositor's frame. Being the nearest to his hand, it contains the letters and characters most frequently used, namely, the small letters of the alphabet; hence these small letters are termed lower-case letters, even when placed elsewhere, to distinguish them from the capitals and small capitals.

Lye—Used for washing type after printing. Its use is not so common now as formerly, as the introduction of benzine, which is in common use for many purposes, makes the latter more convenient. The occasional use of lye, however, is necessary in order

to keep type properly cleaned. A lye may be made from potash well diluted, and used warm if possible. It should be thoroughly rinsed off with clear water. Before washing type with lye, electros or cuts with wood bases, wood furniture, reglets, etc., should be removed from the form, as the lye and water will quickly spoil such material.

M—In the Roman numbers M signifies one thousand (1000). In making a new face of type the lower-case m is used to fix the "line" of the face on the body. (See *H*.) As an initial letter or part of abbreviations M. and m. have many significations, as may be seen by reference to a dictionary list of abbreviations.

M's—Second quality in paper stock; that which is not up to the standard in the first sorting at the mill, though in some cases the imperfections may be so trivial as to be detected only by an expert. R (or *retree*) is paper-maker's term for inferior paper.

Mackle—When part of the impression appears double because of a shifting of the paper while the impression is being made.

M.F. or m.f.—Machine-finished, applied to common grades of paper the surface of which is smooth enough for line-cuts but not for fine halftones.

Majuscule — A capital letter. The earliest form of writing in Latin was in this style, but after a time the scribes found it easier to make small letters (*minuscule*) and capitals were used only for emphasis and ornamental purposes.

Making Margin—Putting furniture and other blanks around the pages in a chase, so that they will be printed in the proper place on the sheet.

Making Ready — Preparing a form on the press for printing, by giving each part the proper impression, setting the gauges, etc. The make-ready is the tympan-sheet and overlays for a particular form. Making ready comprises all the operations needed to make a satisfactory impression from a form.

Make Even—To make the copy come out even at the end of the line. When copy is divided into takes in the middle of paragraphs, it is necessary for the compositor having the first part of the paragraph to end even so that it may close up to the next take, which has been started at the beginning of a line. This custom was formerly common in newspaper and other hurried work, when composition was done by hand and work was given in small quanities to many compositors. See *Begin Even*, *End Even*.

Making Up — To arrange lines of type into uniform pages, with headings, page num-

bers, foot-notes, etc., including the needed blank spaces. Making up usually includes all the operations needed after type has been composed and corrected on the galley until it is ready to place on the imposing stone and lock up in the chase. In the case of newspaper and other large pages, making up is done in the chase on the imposing stone.

Mallet — A large wooden hammer, formerly used with a shooting-stick to drive up wooden quoins. It is now rarely needed by the printer.

Maltese Cross — A religious sign ✠ used in rituals and prayer-books in places where the sign of the cross was to be made in the service. See *Religious Signs*.

Manifold Paper — A very thin, strong paper, covered with carbon black on one side. It is used to make duplicate copies at one writing; by placing it face down on a blank sheet and laying another blank sheet on top, the writing made on the top sheet with a strong pressure will transfer the black on the manifold sheet to the blank sheet beneath. It is much used to make duplicate copies on typewriter.

Manila Paper — A strong paper, usually of yellowish or light brown color, made from jute, gunny, old rope, etc.; so called because originally made from Manila hemp. Cheap grades are made from strong wood pulps.

Manuscript — Now understood to include type-written as well as hand-written words. The printer's copy may be manuscript or reprint. Abbreviations, MS., plural MSS.

Map Type — A series of cast characters with which a compositor could set up a map or a diagram in type. The font consists of round, square, angular, and straight lines which can be put together with descriptive words, letters, and figures, so as to produce a diagram quickly and economically. For the compositor's guidance the copy was drawn upon a sheet lined into small squares. Since the introduction of process engraving, by which work of this kind can be done better, the use of map type is rare.

Marbling — A process of decorating sheets of paper and edges of books with variegated colors in irregular patterns.

Marginal Notes — Side-notes, usually set in type smaller than the main page, placed in the margin.

Marking Ink — Indelible, to mark linen, etc.

Mary — In jeffing, "if none of the nicks appear upper-most in throwing, the throw is called a mary," or a mollie.

Mathematical Signs. — The arbitrary marks used in the science of numbers and quantities. Although the common Arabic and Roman numerals are properly included in the signs of this class, mathematical signs are usually understood as those used in

arithmetic and algebra. For printer's use, the type foundries cast them in sizes from 6-point to 12-point and sell them in special fonts. The following characters are made by the American Type Founders Company.

$+$ Plus; indicating addition.

$-$ Minus; indicating subtraction.

$\pm$ or $\mp$ Plus or minus; indicating that the number following may be either $+$ or $-$.

$\times$ Multiplied by; multiplication is also indicated by $\cdot$ thus, $a \cdot b$.

$\div$ Divided by; division is also sometimes indicated thus, $10 : 5 = 2$.

$=$ Equal to.

$>$ Is greater than.

$<$ Is less than.

$\sim$ The difference between.

$\backsimeq$ Is equivalent to.

$\int$ Integration.

: and :: Proportion, as $2 : 4 :: 3 : 6$.

$\propto$ Varies as; symbol of variation; thus, $x \propto y$ is read "x varies as y."

∞ This sign represents a variable number that increases without limit; infinity.

0 Wanting; nothing; zero.

$\therefore$ Therefore.

$\because$ Because.

Σ The sum.

. . . . Continuation; and so forth.

$\sqrt{}$ The radical sign, used to denote square root; when any other than square is expressed a figure denoting the order of the root is placed above the sign, like $\sqrt[3]{}$ cube root, etc.

⊥ Perpendicular to.
|| Parallel.
⌒ Arc of circle.
° Degree of circle.
′ Minute of circle.
″ Second of circle.
∠ Angle.
⌞ Right angle.
□ Square.
○ Circle, 360 degrees.
▭ Rectangle.
△ Triangle.

Matrix — The shallow mould in which the face of a type is cast; also the papier-mache mould made from a page of type for stereotyping.

Matter — Composed type.

Measure — The width of the column or page of type; the width to which the compositor's stick is set for composing. Half-measure is when the width of page is composed of two parts, each set separately, and then placed side by side, as in tables, lists of names, etc. The unit of measure in book and job rooms is commonly the pica (12-point), and leads, rules, quotations, and other furniture are measured and named by their sizes in picas. In newspaper work the measure of columns often is gauged by sizes other than the pica, the common widths of a single column varying between twelve and thirteen pica ems. The adjusting of a composing stick to the required measure should always be done with care,

and, in order to insure accurate justification of a page, it should not be changed until all the lines of that length are completed. To set the composing stick accurately, use pica (12-point) lower-case m's set sideways. Some composing rooms are supplied with a set of brass or steel slugs or blocks, by which compositors are required to set their sticks.

Measuring Up — To ascertain the amount of type set by a compositor. This is done by multiplying the number of ems in one line by the number of lines set, the result being in ems of the size of type used. In England the calculation is made by ens instead of ems. In measuring up type for the purpose of finding the cost of composition, headings, leads, slugs, and quad-lines are usually included as composed lines and the whole measured up as if solid matter.

Medium — A size of printing paper, 19 x 24 inches, writing paper, 18 x 23 inches. The size of double medium, 24 (now often 25) x 38, is in this country the most common size for printing paper of all kinds.

Medical Signs — Those in common use are: ℞ (Latin, *Recipe*) take; $\overline{aa}$, of each; $\overline{3}$ ounce; 3 drachm; ℈ scruple. Contractions and initials (of Latin words usually) are numerous in medical literature.

Mergenthaler Linotype — A line-casting machine invented by Ottmar Mergenthaler, first put into practical use in the office of

the New York Tribune in 1886. The first machines were quite different in construction from those of the present day, though the principle is the same. It consists, briefly, of a mechanism for assembling brass dies or matrices in lines, presenting them in front of a mould in which a slug, with the characters of the matrices, is cast, and returning the matrices to their proper channels for use again. The brass matrices have the characters of the alphabet, figures, points, etc., sunk on their edges; these are held in a magazine, which is an arrangement of channels in an inclined position above a keyboard. By the pushing down of the keys the required matrix is released, which drops and is carried into place by a small belt. Wedge-shaped spacebands are also controlled by a key, and when enough matrices and spacebands are assembled to fill the line a bell rings. By depressing a lever the line of matrices is then moved in front of a mould fixed on one side of a wheel and behind which is a pot of melted metal. The wedge spacebands are then forced upward between the matrices, thus justifying the line. As the line is justified, a plunger in the metal-pot forces a quanity of metal into the mould and against the line of matrices, forming a slug with the letters in relief on one edge. After the cast is made, a turn of the mould-wheel and other mechanism

shaves off the surplus metal on the foot of the slug and pushes it between knife-edges, where it is trimmed on the sides, and then out on to a galley. The metal is heated to a liquid state by a small gas furnace under the metal-pot. After the matrices have been used for the line, they are lifted by an arm to the top of the machine and distributed again, each character in its particular channel in the magazine. The matrices for each character have a set of notches or teeth different from every other character; and as they are moved along the distributing apparatus by horizontal screws, each matrix reaches a point where its notches are matched and it drops into the top of its channel. The work of the operator is to manipulate the keyboard and, at the end of each line, move a lever which engages the mechanism that carries the assembled line to the mould. All other operations are performed by mechanical power. There are a number of matrices of each character, and the arrangement of the machine is such that three lines of matrices may be kept in operation at once —one being assembled, one at the casting mould, and the third being distributed. The advantage of the Linotype for composition are that the justification is automatic; distribution of type is not needed, as, after use, the slugs are thrown back into the metal-pot; and composition may be

done at a rate three or four times faster than by hand. The newest models of the Linotype have many improvements, such as quick-change double-magazines, whereby two or more different faces may be cast on the same machine; an attachment for tabular work; long-measure moulds, and two sizes of moulds in the same wheel; double-letter matrices, on which two different faces are made, one above the other, on the edge of the same matrix, the desired face being adjusted to the mould by raising or lowering the line of matrices.

Meridian — A size of type in the old-style bodies equal to four-line small pica; rarely used.

Metalithography — A recent term, to denote printing from zinc and aluminum, which are used as substitutes for stone in lithography. Metal printing surfaces of this kind may be used on rotary presses, where stones cannot be.

Metal Quoins — Patented iron quoins, made in several styles, as distinguished from the old style wooden quoins.

Mezzo Engraving.—A method of copperplate engraving in which the entire surface of the plate is slightly roughened, after which the drawing is traced and then the portions intended to show high-light are strengthened. An impression made from a plate so produced, characterized by an even graduation of tones.

Metal Furniture — Blanks of various sizes cast in metal. See *Furniture*.

Midget Safety Quoins—These are small brass quoins that can be used in spaces 18-points wide, too narrow to admit the ordinary metal quoins. Two brass pieces are fitted together wedge-fashion so that by tapping one piece down flat with the other their sides will expand and tighten the form.

Miehle Press — A flat-bed cylinder press invented by Robert Miehle of Chicago. It is made in several styles and sizes — a two-roller pony, two-roller and four-roller book and job machine, etc., as well as a two-color machine. A distinctive feature is the mechanism which carries the bed and cylinder in harmony while the impression is made, the bed then gradually slowing down while it passes over the center and starts on the return movement. Because of its careful, construction, insuring strong impression, close register, and capability of high speed, it has become popular as a machine for high-class miscellaneous work.

Mimeograph—An apparatus invented by Edison, by which stencils of written pages may be obtained for the production of an indefinite number of copies. A pointed stylus is moved as in writing with a lead pencil over a kind of tough prepared paper placed on a finely grooved steel plate, and the writing is thus traced in a series of minute perforations. Stencils may also be prepared on typewriters.

Mill Board — A very thick card, rolled hard and smooth, used for stiff book covers, etc.

Minion — A size of type between nonpareil and brevier in the old-style type bodies, approximately 7-point. The minion made by different foundries often varied greatly in size, as did some of the other old-style bodies. It is a size much used in newspapers, for notes and extracts, and for reference works. Minionette was a size varying slightly from the minion, being a little smaller; it was formerly sometimes used for ornamental borders, but as a size for type was not used in this country.

Minnikin — A name rarely given to types half the size of nonpareil; the names half-nonpareil, or 3-point, are now given to types when made of this size, such as piece-fractions, accents, etc.

Minuscule — See *Majuscule.*

Minute Mark — The mark ′ used to denote geographical or chronological minutes. Two marks ″ denote seconds. This character is also used in other ways, as in dictionaries, spelling books, etc., to indicate accented syllables in pronunciation; in catalogs and commercial forms to express feet and inches, like 2′ 4″.

Misprint — A typographical error, made either through oversight or accident.

Mitering Machine — A small bench machine used to mitre brass rules, etc.

Mitre — A bevel on the ends of brass rules or other lines, so that they may join at an angle on corners; old printers termed them chamfered rules.

Modern Roman—That general style of roman type-face which is distinguished from the old-style roman by greater regularity of shapes, more precise curves, and delicate hair-lines and serifs. The first distinctive type of this style was made by a French printer and type-founder, Bodoni, about 1770. It has since been very generally used, especially in books and newspapers, though the old-style face has of late years grown in favor for miscellaneous work. A comparison of the following letters with the Caslon old-style and modernized old-style will show the distinctive features of each.

Modern Roman

ABCDEFGHIJKLMNOPQRSTU
abcdefghijklmnopqrstuvwxyz
1234567890

Caslon Old-style

ABCDEFGHIJKLMNOPQR
abcdefghijklmnopqrstuvwxyz
1234567890

Modernized Old-style

ABCDEFGHIJKLMNOPQR
abcdefghijklmnopqrstuvwxyz
1234567890

Monogram — A character composed of one, two, or more letters interwoven. Initial letters of names are commonly used in this manner and the device employed for stamping stationery, cards, etc.

Monotint — Printing in one tint of ink.

Monetary Signs — $ dollar, ¢ cents, £ pound sterling, *s.* or / shilling, *d.* pence, @ at, ₱ per, % account, % per cent.

Mortised — When a cut, electro, engraving, or type has some part cut out, either in the interior or on the sides, to allow of the insertion of other matter, like words or lines of type, brass rules, etc. A large letter will often be mortised in its blank parts, to allow closer fitting of small type beside it.

Morton Lock-up — This consists of one, two, or more Wickersham quoins attached to a steel side-stick, for use in special forms or places for which the side-stick is specially fitted. Fixing the quoin on the side-stick gives the advantage of having to handle only a single piece on the side of a large form, and the quoins are always held in place. See *Wickersham.*

Motto Indention —To indent the lines so that a narrow paragraph is placed on the right side of the page; often seen in French title-pages, but not common here. Sometimes called French indention.

Mottled — Spotted with various colors, like card and paper novelties, etc.

Mounted — When a sheet or print is pasted on a larger and heavier sheet or a card. An electro or engraving is mounted on a base of wood or metal, to make it type-high.

Mutton-fist—A name sometimes given to the index or fist ☞

Mutton Quad— An em quad. For clearer distinction in speaking, compositors call the em a *mutton*, and the en a *nut*.

Multicolor Type—For printing letters in two or more colors. This makes necessary a separate type for each color, the different parts of each letter being made to register together. Wood types have been made in this manner for use in colored posters.

Multiple Mark—The multiplication sign ×.

Music Type—For printing music. The large number of characters and the complicated cases holding them make music composition much more difficult than ordinary work. A great deal of music printing is done by lithography.

New Departure — A term given to an improved make of type-case, in which the bottom, instead of being one piece of thin wood, consists of three plys of very thin wood glued together so that the grain of one ply crosses that of the others. This makes the bottom less liable to shrink, warp, or split open.

News — Among printers, any thing or subject pertaining to newspaper work, and the special equipment and material used, or the place in which newspapers are printed; as news paper, news ink, news press, news chase, news room, etc.

New York Job Case — A style of type case with boxes for capitals, lower-case, and small capitals. The lower-case boxes are reduced in size to permit of two extra rows of boxes at the top, which accommodate the extra font of small capitals.

New York Stand — A style of case stand on which the capital case is held on two brackets slightly higher and nearer to the front than on the ordinary stand.

Nib — The small ear or projection on the end of a composing rule, by which the compositor takes the rule from between lines after setting.

Nick — The notch on the side of a type. In this country and England all foundry-cast types have the nicks on the under side of the letter. By observing the nicks as he sets from the case, the compositor can place the types in the stick right side up without stopping to scrutinize the face. The number of nicks on a type varies from one to five, and they may be made in different positions. As all the types of a font cast at one time usually have identical nicks, the variation in number and

position of these marks also serve to distinguish one kind or size of type from another. Wrong-font letters may often be detected by a difference in nicks when a line is being justified in the composing stick.

Nickel Faced — Electrotypes are sometimes nickel-faced when they are to be used for red ink, because of the destructive chemical action of red ink and copper. The nickel-facing is commonly a deposit upon the electro, but it is also done by depositing a shell of nickel instead of copper directly on the wax-mould and mounting this nickel shell in the same manner as an electro. Types have also been nickeled by depositing a thin film upon their faces to add to their durability, but this practice is rare.

Nippers — Slightly curved metal fingers fastened on a rod in the opening of a printing cylinder; they catch the edge of the sheet at the proper point as the cylinder revolves and release the sheet after the impression is made. Tweezers are sometimes termed nippers.

Nipper Gauges — The movable gauges at the lower edge of the feed-board of a cylinder press; the nippers on the cylinder catch the sheet after it is fed to the gauges, while the gauges rise slightly to let the sheet pass under.

Nonpareil — A size of type equivalent to six-point; one of the most common sizes in use, half of pica. Several kinds of material are made in nonpareil or six-point size, like nonpareil brass rule, nonpareil reglet, nonpareil slugs, etc.

No. — Abbreviation of *Numero*; Number. This is used only before a figure or other numeral, and the capital N is required; no. is not a good form in type.

Note — An explanatory phrase, sentence, paragraph, or brief statement, usually set in smaller type than the main text, like foot-note, side-note, etc.

Note Circular — A circular or communication printed on one or more pages of note paper. A single leaf is a half-note; a folded sheet is a full-note.

Note Heading — A printed heading, as of the name, address, business, etc., printed at the top of a sheet of note paper.

Note Paper — A size of writing paper, one half the size of letter paper; the most common sizes used by printers are commercial note (8½ x 11 inches, folded) and packet note (9½ x 12 inches, folded).

Note of Admiration — The exclamation mark [!] was formerly sometimes thus called. This mark is also called a *screamer*.

Numbering — The printing of figures in consecutive order on envelopes, tickets, coupons, and other work.

Numbering Machine — A compact mechanism for printing numbers in consecutive order. It consists of two or more small wheels, each having on its periphery the figures 1 up to 0. These wheels are placed side by side in a metal case and are made to turn by the depression of a plunger attached to the first wheel. After setting the first wheel at figure 1 and the others at blank, the plunger is depressed at each impression and turns the figure-wheel to bring up the other figures in succession. When the 0 comes up, the next wheel is turned to figure 1 and remains at 1 till the first wheel has again turned round to 0, when 2 appears on the second wheel. This operation may be repeated up to the capacity of the machine, or 99 on a two-wheel, and 999999 on a six-wheel machine. Typographic numbering machines may be locked up in the chase beside the form of the ticket which they are to number, and printing and numbering done at one operation. Hand numbering machines are used on desk or table. The printing is done by a downward pressure of the handle and a spring automatically moves it back, this motion giving the wheels the necessary turn to bring the next number into place.

Numerals — The Arabic and Roman characters used to express numbers: 1 2 3 4 5 6 7 8 9 0, and I V X L C D M, or i v x l c d m.

OBELISK — Another name for the dagger [†] one of the old-style reference marks.

Oblong Page — One that is wider than its height; the reverse of an upright or more common style of page.

Octavo — When a sheet of book paper about the size of 19 x 24 inches is folded in two leaves it is called a *folio;* when folded in four leaves, a *quarto* or 4to; folded in eight leaves, an *octavo* or 8vo; in twelve leaves, a *duodecimo* or 12mo, and so on. Smaller folds are 16mo, 24mo, etc.

Octodecimo — A sheet folded into eighteen leaves; more commonly 18mo.

Odd Folios — The page-numbers which come on the first side of the leaf, 1, 3, 5, 7, 9, etc. The even folios are on the second side or back of the leaf, 2, 4, 6, etc.

Off — A form is off when all the sheets required have been printed and it is ready to be taken off the press.

Office — The room or place where printers work; generally understood to mean the entire establishment, with machinery and other materials, as well as the counting room. In America this term has been used almost exclusively in relation to the place where printing is done, although the term printing-house or shop is now often used, and certain so-called up-to-date smart persons dub the place a printery.

Off-cut — The smaller part of a printed sheet imposed in such a manner that the sheet must be cut before folding, as in a twelve-page sheet, which may be divided into a four-page and an eight-page sheet for folding, and then one set into the other to make the twelve-page signature.

Office Corrections—Proof-reader's or author's changes ordered after type has been set according to copy and for which the compositor is not responsible; in piece-work such corrections are charged extra.

Off Its Feet — When type does not stand squarely on its base. Type must stand exactly on its feet in order to give a good impression.

Off-set or Set-off—When the face of a freshly-printed sheet rubs and smuts the sheet on top of it. The squeezing together of a number of sheets, as when cutting under the clamp of a paper-cutter, will set-off onto the facing page ink that is not thoroughly dry.

O. K. Proof — Mark of approval on proof.

O. K. with changes (or corrections)—Mark of approval on proof, with minor changes.

Old English — The name given to a style of black-letter or text made in many varieties. **Old English.** Mr. DeVinne, in "Plain Printing Types," says of it: "The style of black-letter most approved by English

readers is the pointed form, which Blades says is modeled on the lower-case letters of the Bible of Forty-two Lines. Although it has been supplanted as a text-letter by the roman, it is so identified with early English printing that it fairly deserves its generally accepted name of Old English."

Old-Style—Old-style and modern are the two general classes into which roman type-faces are divided; numberless varieties of both styles are made, and many of them are often difficult to place in one class or the other. In general, the true old-style in use today may be said to follow closely that of the Caslon form. The type in which this dictionary is set is a modernized old-style. Another form of old-style is known as French Old-style or Elzevir, (French Oldstyle), which has been much used in this country, although not now so popular as it was fifteen years ago. See *Modern*.

Open Matter — Matter widely leaded or containing many short lines; in piece-work called *fat*.

Open Spacing — Wide spacing, as in matter that is widely leaded.

Opisthographic — A pedantic term for printing or writing on both sides of a leaf.

Oriental Type — That used for the Eastern languages, Hebrew, Syriac, Arabic, etc.

Original — The first engraving or plate, as distinguished from an electro or other duplicate.

Ornament — A floret or small decoration cast in type.

Ornamental Brass Dashes [——•—•—•——] These were more commonly used twenty years ago than now. The type-foundry specimen books show a great variety of patterns.

Orthography — The art or proper mode of spelling words; spelling.

Ounce Mark [℥] — The sign for ounce in apothecary's weight.

Out — An omission of words.

Outer Form — The form which contains the first and last or outside pages of a signature when the work is done sheetwise. On a sheet of eight pages printed in two forms, pages 1, 4, 5, 8 is the outer form; pages 2, 3, 6, 7 is the inside form.

Outlined—Said of a halftone engraving with the background screen cut away entirely, leaving only the objects of the picture. A vignetted halftone has the background shaded off gradually.

Outline Letters, Outline Figures—Types which print the outlines of the character, in distinction from those which print the full color. Several faces are now made in outline as well as solid. Outline Letter

Out of Condition — Said of printing rollers when they are too soft or too hard for proper working.

Out of His Time — When an apprentice has completed his term of apprenticeship.

Out of Letter — Out of type; when the case is short of letters or sorts needed.

Out of Register — When the pages on both sides of a sheet do not back each other accurately the sheet is out of register; or when the two or more colors of a job do not strike in proper relation to each other the job is out of register.

Out of Sorts — When any needed letter or other character has been all set from the case, the compositor is out of sorts. See *Empty Case.*

Out of Use — Type or other material that is kept standing and not used for a long time.

Out Page — The first page of a sheet; it usually has the signature mark at its foot.

Out–See Copy — Marked on the margin of a proof to signify that the compositor has omitted something and directing him to refer to copy.

Ovals — Brass rule forms of oval shape, for labels, etc. They are made by type foundries in several styles of face, and are troublesome things for the compositor when he must justify a lot of small type inside of them.

Outside Sheets — The top and bottom sheets of a ream or bundle of paper, usually damaged and not included in the count.

Overlay — A piece of paper put on the tympan to give more impression to a letter, line, or part of an engraving. Overlays for halftone engravings are now made of metal, as well as of a sort of rubber paste applied to the tympan with a brush, etc. The metallic overlay consists of a thin sheet of zinc upon which an inked impression of the engraving has been made. After this impression has been "fixed" by chemicals and heat, the zinc is immersed in acid and etched — the light parts are eaten away and the dark parts remain. This zinc sheet is then fastened in place on the tympan and a top sheet drawn over.

Overlay Knife — A small, flat piece of steel, about six inches long, with one end finely sharpened, especially adapted for cutting out paper overlays; pressman's knife.

Over-running — Taking words backward or forward from one line to another, in correcting.

Overtime — Work done after the regular working hours, which is usually paid for at increased prices.

Own Paper — See *Its Own Stock.*

Oxford Corners — Border rules crossing and projecting at the corners, as on title-pages or cards.

Packing — The material used for tympans, applied more particularly to the coverings around printing cylinders.

Pad — A number of small sheets of one size glued on one or more edges ; a convenient form for single sheets of stationery, memo. blanks, etc., as they can be held together until used one by one. Padding is done by carefully jogging the sheets until the edge of the pile is smooth, then with a brush covering the edges with a specially prepared elastic glue.

Page—One side of a leaf of a book or newspaper ; a page of type is a composed form that would be printed with margins on all sides.

Page Cord — The twine used to tie up pages of type.

Page Gauge — A measure to determine the length of the pages of a work ; commonly a piece of reglet or brass rule notched to show the proper length and used by the make-up hand to keep pages of a book of uniform length.

Page Papers—Sheets of heavy paper or card upon which tied-up pages are placed for storage, instead of keeping them on galleys ; also called page shoes.

Pagination — The numbering of pages of a book, etc.

Paging Ink—A special ink for use on paging machines.

Paging Machine — An automatic numbering machine for consecutively numbering the pages of blank books, etc. See *Numbering Machines.*

Palimpsest — A bibliographer's term to denote a parchment or other sheet which has been written upon twice, the first writing having been wholly or partly erased to make room for the second. Manuscripts of classical writers were often treated in this manner during the Middle Ages, and the original writing on some of these has since been restored by washing off the second writing and freshening up the first by chemical and other treatment.

Pallet Knife—A small ink knife, or one used for similar purposes.

Pamphlet — One or more printed sheets stitched together but not bound like a book.

Panel — Any square or rectangular design enclosed by four rules or borders.

Pantograph — An instrument for mechanically copying, tracing, or cutting a design in duplicate, either in the same size, or smaller or larger. It consists usually of four rods or arms held together by adjustable pins. Two points of this frame move in unison if a third point is held stationary, and if one of these two points is moved over the pattern a pen or cutting tool will reproduce the design at the other point.

Paper—The thin sheets of material upon which nearly all printing is done. Paper may be made from all varieties of vegetable fibres, those most commonly used being linen and cotton rags, hemp, jute, esparto, straw, and wood. The raw material necessary for paper is cellulose, the indestructible walls of the microscopic cells of which all vegetable fibres are composed. The quality of paper is dependent upon the quality of the cellulose, and as cotton comes the nearest to pure cellulose it makes the best paper. Paper is made by grinding, bleaching, beating, and boiling these fibres until they are reduced to a fluid pulp, in which condition they readily mat or felt together when the water has been pressed out. Paper was formerly made by hand, the operation being to dip the pulp from a vat with a mould having a screen bottom; when the water drained away the remaining film of interlaced fibres were pressed out and dried. Some kinds of writing, drawing, and printing paper are still made in this way, but the great bulk of paper now used is made by machinery. Paper is made in a great variety of qualities, from heavy drawing board to the thinnest tissue, and in every color and shade. The more common kinds have the surface finished in various styles. Antique finish is really an unfinished surface, the paper being left rough by very

slight pressure of the machine rollers; machine finish is the surface imparted as it passes once through the ordinary machine rollers; calendered paper is passed through a set of extra rollers, called calenders, which subject it to a heavy pressure, the degree of polish being governed by the number of rollers and amount of pressure; coated paper is a machine finished paper that is coated with fine clay and glue and polished in a stack of friction calenders; linen finish, pebble finish, and various other surfaces are given by running the sheet between rollers which have their surfaces prepared to give the desired impression. For some purposes, like newspaper printing, paper is finished in a continuous web of great length in rolls, the printing being done from the uncut web and the sheets immediately cut off in another part of the machine. Paper is, however, commonly handled in sheets, the size of the sheets varying somewhat according to the fashion or special use to which it is put. See *Deckle-edge*, *Laid Paper*, *M. F.*, *Wove Paper*, and other headings.

Paper Cutter — A machine for cutting and trimming paper. It is a necessary article in every printing office and bindery, and is made in many styles and sizes. Small paper cutters are made to set on a bench, and the knife is operated by means of a hand lever; large ones stand on their own

frames on the floor, and may be operated by a hand-lever or by power like other machines. In addition to the knife, which is moveable up and down in its frame, the machine must have a clamp to hold the pile of paper firmly while being cut. Another convenience is a moveable guage on the table, so that any required size may be cut and any number of piles made of one size. Paper to be cut should be jogged up evenly and the top sheet of the pile carefully marked where the cut is to be made. It is always well to take extra care in this matter, as mistakes in cutting paper are costly. When cutting expensive paper, have a waste sheet on the top and bottom of each pile, to save good sheets from spoilage.

Paper Knife — A small implement for opening letters and cutting the bolts or folded edges of untrimmed magazines and pamphlets. A steel or bone folder, or even a piece of thin reglet with its edges tapered off, is oftener used by printers for these purposes, a paper knife being a desk convenience.

Paper Sizes — The sizes of printing papers range from 14 x 17 inches to 38 x 52 inches, and it is always safer to specify the size of a sheet in inches, rather than to depend upon the old-time arbitrary names. The size 25 x 38 is now the most common

one for book papers; 28 x 44, and 32 x 44 also are sizes in which papers are to be had in greatest variety. From the last two, by cutting in halves, are obtained two sizes (22 x 28 and 22 x 32) which were once common, but which are now rarely carried in stock by paper houses. Other sizes of book papers not so common are 26 x 40 and 28 x 42. Flat writing papers come in a greater variety of sizes and the trade names are still more or less in vogue.

SIZES OF FLAT WRITING PAPERS

Cap	14 x 17
Demy	16 x 21
Folio	17 x 22
Double Folio	22 x 34
Double Cap	17 x 28
Royal	19 x 24
Cardboard	22 x 28

Cap is now rarely obtainable, double cap (17 x 28) having taken its place. The following sizes are of ledger papers, usually of best grades only:

Crown	15 x 19
Super Royal	20 x 28
Double Demy, long	16 x 42
Double Demy, broad	21 x 32
Medium	18 x 23
Imperial	23 x 31
Double Medium, long	18 x 46
Double Medium, broad	23 x 36
Double Royal	24 x 38
Double Elephant	27 x 40
* Elephant	23 x 28
* Columbier	23 x 34
* Atlas	26 x 33
* Antiquarian	31 x 53
* Emperor	48 x 72

Last five are high grade ledger sizes and not often called for.

Paper Up—To wrap type or sorts in paper, as of matter that is to be put away for future use.

Papeterie—A box of paper with envelopes to match, etc., such as is sold by paper houses and stationers.

Papier Maché—Mashed paper; a hard substance made from paper pulp mixed with size or glue and may be formed, while soft, into any desired shape. The papier maché method of stereotyping uses a matrix made up of sheets of blotting and tissue paper pasted together with a mineral paste.

Papyrus—A kind of plant formerly cultivated in Egypt and used for making paper. It does not now exist there, but is found in some other places. It was grown on the delta of the Nile and was used for other purposes beside paper-making, although this was its chief use. It is said to have grown to a height of ten or twelve feet, and stood partly in the water like a bulrush The parts used for paper were the thin layers between the outer bark and the inner pith. These layers were laid side by side and other layers place crossways, the mass being then beaten together and held by a fine glue or paste. Papyrus was made in sheets of different sizes, although much smaller than we are used to in modern paper, and the quality also differed greatly. Sheets and rolls of papyrus

manuscript many centuries old are found with mummies and in other places, and have preserved to the modern world valuable records of ancient Egyptian history.

Paragon—An old-style size of type equivalent to two-line long primer; or what would be 20-point in the point system.

Paragraph—One or more lines of a composition placed together, usually distinguished or separated from other matter by the indention of the first line and a break in the last line. The paragraphing of a composition is commonly the author's duty, and no rules can be given the compositor except to "follow copy" where that is clear. The general custom is to make a new paragraph when there is some change in the subject or in the sequence of thought. A paragraph may consist of one short sentence, or it may include a number of long sentences. The modern practice is to make paragraphs freely, as tending to make the composition easier to read. The usual indention is an em quad at the beginning of matter set in narrow or medium measures; when the lines are long the indention is increased to two ems; even three or four ems may be used in very wide columns of small type. As a rule, wide-leaded and wide-spaced lines will need more indention than close-spaced, solid matter. The indention

should be enough to indicate the paragraph clearly, but not so much as to make distinction unduly conspicuous. When the paragraph indention is wide, the last line of the preceding paragraph should have more than a short word or syllable in it, otherwise the extra wide break in the matter will be a blemish on the page.

Paragraph Mark—The most common form is this ¶, which is really the letter P reversed, with the white part black and the black part white for distinctiveness. Paragraph marks for use with black-letter or Old English are of this style ❡ and some variations. Typefounders have in recent years made several styles of paragraph marks, and they have become common in miscellaneous work.

Parallel Mark—One of the old-style reference marks ‖.

Parchment—A paper-like sheet made from the skins of young animals, like the sheep, goat, etc. Paper parchment, or vegetable parchment, is made by chemically treating ordinary paper. See *Vellum*.

Parenthesis (plural *parentheses*)—The upright curved stroke used in pairs to enclose words, figures, or other matter in the body of a sentence; also, matter thus enclosed. The use of other punctuation marks in conjunction with the parenthesis is a puzzling question to many compositors, owing

to arbitrary rules and whimsical practices of writers and proofreaders. The safe rule is to use punctuation marks as if there were no parentheses, omitting points between the parenthetical matter and the word or clause to which it belongs; if this word or clause is followed by a point, then the point should be after the parenthesis.

It was less than half (46, to be exact) last year.
In that year (1898), because of dispute, he left.
The door was open; he (the witness) saw no coat.
The Salem (Mass.) Gazette was established 1790.
Col. Humphrey (aid to Washington), Gen. Eaton.

Partly Printed Newspapers—See *Patent Outside, Ready Print.*

Passing the Galley—An old-time practice in composition, when each compositor, as he completed setting and correcting his take, made up the matter into pages and then passed any left-over lines, with heading and page-number, to the person having the next take; in this manner each compositor in turn completed his part and laid the pages in order on the imposing stone for locking up. Nowadays making-up is usually done by another hand beside the person who set the type; in book and newspaper rooms this part of the work is specialized. In newspaper offices, where a number of compositors have set type on one galley, each with this number or slug at the top of the lines he set, the galley is passed from one to the other in turn for

corrections when proof is returned. In this matter the practice is for the compositor whose take is at the top of the galley to correct his errors and if the next take has three or more errors, to pass the galley to the next; if, however, the following take has only one or two minor errors, he is expected to correct them also and pass the galley to the compositor whose take shows three or more errors. The rule varies somewhat in different places regarding the number and kind of errors which will pass a galley, but the custom favors a compositor who sets a clean proof.

Passing the Make-up — Same as passing the galley in book work.

Pasteboard—Thick, stiff card made by pasting two or more sheets together.

Pasters — Small handbills, slips or notices pasted on fences and walls, or on large prints, lithographs, etc.

Patch Up — In making ready on press, to paste pieces on the tympan sheet to bring up the impression stronger in spots; usually the final touches in making ready with overlays.

Patent Space—Type spaces of the thickness of two five-to-em spaces; thicker than the three-to-em and thinner than the en-quad. This space is common in 12-point and larger sizes, but the name is not now often employed.

Patent Outside — Said of a newspaper or other publication having one side printed at a city establishment making such work a specialty, while the other side, usually containing local news, etc., is printed in the home town. This arrangement is an economical one for the publisher in a small place, as he can purchase partly-printed sheets, with stories, household recipes, and miscellaneous matter, at a price a little in advance of the white paper, thus saving the expense of setting up and printing one-half of his sheet. Newspapers of this class are known as "patent" outsides or insides according to whether the part supplied is the outside or inside of the completed sheet. The economy in producing a "patent" sheet comes from utilizing the same matter for many newspapers issued in different places, the change of headings, date, etc., being all that is required to print each paper after the pages are once set. The patent outside is not now so common as it was twenty-five years ago, publishers having a natural pride in producing a "home print" paper whenever possible; the greatly increased facilities now within reach of the "country" printer, with cheap machine composition, as well as the more convenient ready-set stereotype plates that are now furnished daily by central offices in large cities, all have tended to make the "patent outside" an antiquated method of publishing. Also called ready print.

Pearl—A size of type in the old-style bodies approximating 5-point in the point system. It is the smallest size of type in common use; several smaller sizes are made (diamond, brilliant) but they are only practical for occasional service, on account of the cost of making and handling and their fragile nature.

Pebble Finish — One of the many novel surfaces given to paper nowadays. Like some other finishes, grained, linen, crimped, etc., it is produced by passing the sheets with strong pressure between steel rollers having a surface of the desired pattern. Halftone engravings are sometimes printed on highly polished coated paper, to get a clear, sharp impression of the delicate parts, and when thoroughly dry the sheets are run through a pebbling machine to get rid of the shiny surface and give softened photographic effects.

Perforating Machines—Are special machines used in binderies and other places. They consist of blades of large or small needles held in such a manner that they may be punched through a sheet placed on a table below. Another style of perforating machine is a small wheel having on its periphery a series of small pins; this is adjusted on a table and, while revolving, the sheet passes under the pin points and is marked by a line of small holes.

Perforating Rule—Sharp, dotted rule slightly higher than type; it is placed in a form and perforates lines in a sheet to permit easy tearing off where desired, as in check-books, coupon books, etc. The printing of perforating rules with the type form is done only on cheap grades of work, as it saves an extra operation, and the rule, being inked with the rest of the form, leaves a black, unsightly mark on the sheet. There is also the liability of spoiling the inking rollers with this sharp, high face. A more satisfactory way is, after the printing is done, to take the rollers off the press, lock up the perforating rules by themselves in a chase, set gauges in proper position, and run the sheets through just for the perforating. Several mechanical appliances have been invented for perforating sheets while printing, to do away with the disadvantages of the rules. One consists of an arrangement whereby the perforating face drops down below the face of the type while the ink rollers are passing over, thus taking no ink, and when the printing impression is applied the perforating line rises in its place and remains there to mark the sheet. Another style for job presses, is attached to the lower part of the platen like a gripper, and when placed in position to come between type lines of the form, is forced into the sheet while the printing impression is made.

Pasted Bristol—A high grade cardboard made by pasting together two or more sheets of paper.

Patent Block—A trade term for several kinds of wood and metal bases upon which electros or engraved plates are mounted. For use on a press they are of a height to bring the face of the plate level with the type face, and each block has clamps or catches on the sides to hold the plate securely. There are now several styles of metal bases, of variable sizes and constructed on a unit system; after assembling a number of units to make the desired size, the plate is fastened on top and the whole bound together by screw clamps. See *Sectional Blocks*.

Perfecting—The printing of the second side of a sheet; the re-iteration. A perfecting press is a machine which points both sides of the sheet before it is delivered.

Perforating—To punch lines of small holes or slits in a sheet so that it may afterward be torn off with ease. Scoring is merely to crease a sheet so that it will bend or fold at a given place.

Period [.]—A mark of punctuation.

Periodical—A publication which appears at regular periods of time; the term is commonly applied to magazines, reviews, annuals, and publications issued monthly or less often, rather than to newspapers.

Permanent Inks (or Colors) — Those which do not readily fade or change when exposed to light.

Per Mark [℔] — A commercial sign, used in market reports, etc.

Phonography—Writing by sound; shorthand.

Phonotypy—Printing with characters representing the sounds of the voice, the idea being to use for each elementary sound a special letter which represents that sound and nothing else; phonetic printing. There have been many schemes and special characters devised from time to time, but none have been employed to any extent.

Photo-aquatint—An engraving made by the photo-chemical process, the result being an intaglio copperplate from which impressions similar to photo-gravures may be made; a print made by this method.

Photo-chromo—A colored picture produced by plates engraved by photo-mechanical means. See *Three-color Process.*

Photo-engraving—The process of making, by means of the chemical action of light upon a film, engraved plates or blocks for printing. The term may be meant for intaglio as well as relief work, but it is in this country usually applied to relief plates such as halftones, metzographs, and zinc etchings. The intaglio plate is more commonly known as photo-gravure, photo-aquatint, etc.

Photo-gravure—A print and also the process of making a print from an intaglio engraving. There are numerous variations in the process as carried on by different operators, but the general method is by chemically treating a gelatine, albumen, or asphaltum film on a metal plate; this is next printed with a photographic positive, the action of the light making a relief copy of the original on the film. The other portions are then washed away and the plate etched with acid. There are no sharp, incised lines, but minute depressions; the deep parts into which ink is deposited, making the shadows, and the shallower parts, holding very little ink, producing the lighter tones of the picture. Impressions are made in the same manner as from steel and copperplate engravings, the work being slow and expensive, so that printing done by this method is limited to art subjects, portraits, and fine book illustrations. Varieties of photo-gravures are known as Albertypes, Woodburtypes, artotypes, collotypes, heliotypes, etc.

Photo-lithography—When the design is put on the lithographic stone by photography instead of being drawn on by hand or mechanically. See *Lithography.*

Photo-mechanical—Pertaining to printing surfaces made by photographic and mechanical means; photo-engraving; phototype.

Photo-zincography—The process of making a relief engraving on a zinc plate, somewhat in the same manner as photo-lithography; a photo-etching on zinc.

Pick—A spot made by filling in the hollow parts or counters of type or plates.

Pick for Sorts—When the case is empty, to take letters from standing matter, whether live or not, to use for the job in hand; a common practice, and sometimes necessary, but mostly due to bad management of the composing room in not keeping dead matter promptly distributed.

Pick-up—When a line, heading, or other matter can be taken out of a dead form and used over again, it is a pick-up.

Pickle—A weak acid used to clean out old electros, engravings, etc.

Pi—Type mixed and in confusion. A *squabble* is when a page or paragraph has been twisted out of shape.

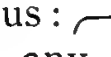
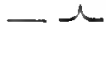
Pica—A size of type equal to 12-point. It is the standard of measurement for leads, rules, furniture, and also for width and length of pages. Six picas equal, approximately, a linear inch.

Piece Fractions—Those that are made up of two or more types. Regular piece fractions are cast on bodies half the size of the type for which they are to be used. See *Fractions*.

Piece-work—That which is paid for according to the amount of work performed, as distinguished from time-work, which is paid for usually by the hour. Composition, when paid for by piece, is measured by the number of ems set, the price being fixed at so much per 1000 ems. On daily newspapers and periodicals, and in many book rooms, piece-work is the rule, as there is much work of a uniform style and a fixed price for a given amount of product may be agreed upon. In job offices and places where there is a constantly varying run of work and the workmen are required to do many different things, time-work is the most satisfactory basis of compensation. Time-work in American printing establishments is now based on the hour, and workmen are required to make a record of all time spent on each job.

Piece Root Sign—See *Root Sign.*

Pieced Leads—When the required length of lead for a wide measure is not at hand, two or more shorter lengths may be put together; thus, ten-em leads and nineteen-em leads may be used to lead a twenty-nine-em paragraph. Brass rules are also used in pieced lengths.

Pieced Brace—Three sections thus:  which may be extended to any longer length by adding dashes,  . See *Braces.*

Pigeon-holed—When extra wide spacing is put between words and the white spaces are noticeable in a page, it is said to be pigeonholed; it is evidence of bad workmanship.

Pin-Mark—The little mark on the *side* of foundry-cast type; it is on the upper part and is commonly circular in shape, the circle often enclosing figures denoting the size of the type in points. The American Type Founders Company uses a pin-mark of this style ⊖, to mark types that have faces cast on its point-lining system.

Plain Rule—Brass rule with plain, straight lines, as distinguished from dotted and ornamental rule.

Planer—The smooth-faced block of wood used to level the face of a form.

Planigraph—An instrument for reducing or enlarging drawings.

Planography—This word is now used as a substitute for zincography and aluminography. It refers to methods of printing from flat surfaces other than stone. Much printing is now done by the planographic method, using zinc or aluminum, by which the impression is off-set from a rubber surface to the paper. See *Rubber Off-set Process*.

Plant—The fixtures, machinery, tools, apparatus, etc., necessary to carry on any trade or mechanical operation or process. This term is now often applied to printing establishments.

Plastictype—A halftone engraving of a clay modeled design. The copy for an engraving of this style may be modeled or carved, or it may be drawn or painted flat so as to give the effect of raised lettering or other design. An electro of a type form or a high relief engraving may be photographed and a similar effect produced.

Plaster Process—A method of making stereotype plates by the use of plaster. A mould of the type page is made by pouring over it plaster-of-paris; this mould, when baked entirely dry, is filled with fluid type-metal. A process now rarely used.

Plate—A duplicate, in one piece of metal, of the face of composed types, wood cuts, etc. Such plates are made by electrotype or stereotype process. A piece of metal engraved for impression on paper, etc., like a book plate, card plate. A print made from an engraved plate.

Plate Printer—One who prints from intaglio copper or steel plates. See *Copperplate Engraving*, etc.

Plated Paper—Made of new and old cotton rags, together with clay; has good printing qualities for copper engravings, etchings, and photo-gravures; quite permanent, but not strong. There is a great difference in finish between two sides of sheet; it is usually unsized and not adapted for writing on with fluid ink.

Plate Matter—Reading matter for newspapers and periodicals cast in stereotype plates and sold to be used by several publishers in different places at practically the same time. The American Press Association, which has branches in many large cities, furnishes plate matter of stories, household and fashion notes, anecdotes, etc., as well as special articles on timely topics and current news. This is in stereotype plates for newspaper columns and the plates are made to fit on special bases which lock up with regular type forms. It is an economical method of publishing, as plates for different publishers are made from one type-setting, thus making the cost of each plate comparatively small.

Platen—The flat part of the press facing the bed; that which presses the sheet on the face of the type.

Platen Press—That style of press which gives the impression from a flat surface—the hand press, Adams press, and small job presses; distinctive from cylinder press.

Playing Cards—Cards for games are one of the oldest forms of printing, and were printed from engraved blocks and probably by stencils before the invention of typography. The manufacture of the regular "deck" of playing cards is one of the most highly specialized lines in the printing trade, and is carried on chiefly by only a few firms.

Plus Mark [+]—The sign of addition.

Ply—In paper making, the number of sheets used to build up a sheet of cardboard, the sheets of paper being pasted together to make two-ply, three-ply, and thicker.

Poetry—In setting poetry, the lines should be indented so as to make the stanzas appear in the middle of the page. This is not difficult to do when the lines are somewhere of an equal length, but in poems which have lines of greatly varying lengths it requires some calculation in order to secure this result without going over the matter a second time. If there is only an occasional long line it may be necessary to put it a little out of the center in order to make all the stanzas keep their place on the page. In the indention of lines of poetry, quads of even ems should be used, in order to secure uniform alignment of the beginning of lines, and the odd spaces needed for justification should be put after the last word in the line. It is customary to indent alike the lines which rhyme with each other, but this is often decided by the author, as is likewise the indention of irregular or unusal forms of verse. The punctuation by the author should also be followed, even if it does seem unusual; and particular care should be exercised in reading copy to observe the use of uncommon words, or the uncommon use of familiar words, which writers of poetry will

often employ. Where quote-marks are used in poetry it is better, when they are at the beginning of the line, to place the inverted commas outside the alignment of the first letters:

He sat upon the deck,
The book was in his hand;
"Do not fear! Heaven is as near,"
He said, "by water as by land!"

The three-to-em space is sufficient blank to put between words in poetry set solid or single leaded; when the lines are opened with two or three leads the en-quad space is needed. An old-time rule in many printing houses was to space all poetry with en-quads or double spaces. In solid lines, this wide-spacing gives a pigeon-holed appearance that is not pleasing, as may be noted in the following stanza:

Blessings on thee, little man,
Barefoot boy, with cheek of tan!
With thy turned up pantaloons,
And thy merry whistled tunes.

When a line of poetry is too long to come into the measure, it is turned over to the next line, the part thus turned over being indented so as to avoid confusing it with the beginning of the regular lines.

The pressfeeder stands while deftly his hands
Pass the sheets gently one by one from the
lift to the gauges.
As the sheet gently glides down the board to
the guides,
He is thus by his skill daily earning his wages.

When space is scant and it is desired to avoid an extra type-line, this turned-over end is often put on the end of the line before or after, as seen in church hymnals.

A song to the Press, the Printing-Press!
Of the good old-fashioned kind,
Ere the giant machine. with its pulse of steam,
Elbows it out of mind.

Point—A mark of punctuation; also the modern unit of type measurement. See *Point System*, *Sizes of Type*.

Points—Pieces of steel placed in the furniture of book forms to mark the sheets as a guide in folding; they are also used on some presses for securing exact register. "Feeding to points" is to place the sheets (in printing or in feeding to a folding machine) so that the points on the machine will fit into the point-holes made at the first printing. This is done where good register cannot be obtained by feeding the edge of the sheets to side guides, as with uneven or deckle edges.

Point System—Formerly there was no uniform standard of type sizes, although most foundries made types in a certain relative proportion which entitled them to be called by certain names. But, as each foundry had a standard of its own, the printer who bought type from different founders had no assurance that the type bodies of one founder would exactly match that of the same name from another. The sizes of

types now cast by American type-founders are graduated on a uniform scale know as the point system. The unit of the system is a division of space called a point (.0138 of an inch), and all types bodies are multiples of and are measured by it. Each size is described by its number of points. See *Sizes of Type.*

Polyglot—A book printed in several languages, in order to unite various versions for the purpose of comparison. Since the early days of typography the Bible has been made in polyglot editions, all of them representing a high degree of scholarly and mechanical skill and immense expenditures of time and money. A visit to a library and an examination of some of these polyglot books will be of interest to any one interested in printing.

Polytype—A name given to types which were cast together in one line and the letters then cut apart; an impractical and discarded method of type-making. The word has been applied to a stereotype process and to a method of making logotypes.

Post—A size of writing paper; in England 16 x 20 inches; in America it is 17 x 22, or folio post, but the name post is discarded and it is simply folio.

Pot Cap—An English size of writing paper, 12½ x 15 or 15½.

Poster—A sign intended to be affixed to a wall or board to convey some public announcement. The use of such signs is probably as old as civilization itself; but with the printing press came in a class of signs more or less answering to the specific modern use of the word poster. In Paris, in the seventeenth century, posters printed on colored paper came into use, and French, English, and American artists have of late years developed the poster to a thing of beauty and great effectiveness. American posters were first generally used to advertise the circus and the theatre; since then they have been used for every sort of an announcement which the printer or his customer wished to make. Posters are printed from large wooden type, as well as from large sizes of metal type, from wood-cuts, zinc-plates, and by lithography. While occasional orders for small posters may be and often are printed in offices doing general jobbing, posters are now done mostly by houses making a specialty of this class of work. In connection with poster printing, bill-posting, that is the distributing and posting on walls or buildings, has assumed immense proportions. The regular size for posters is now about 28x42 inches; some are made on larger paper, but most large posters are now on two, four, six, or eight sheets, printed separately in sections which will match each

other, and put together by the bill-poster at his stands. Very large posters are simply multiples of these smaller sheets. For this large work, large types, engravings, etc., are needed; sometimes a single letter may fill the bed of a large cylinder press. A printing office doing this class of work has stock cuts, borders, etc., of large size, made mostly of wood or zinc, and regularly employs artists and engravers to make designs and cut blocks for special work.

Poster Paper—A general term for the grades of paper suited to poster work, generally coarser but stronger than news and common book paper; also made in bright colors.

Poster Chase — A large chase without crossbars, in which poster forms can be locked.

Poster Stick — A large wooden composing stick for poster work.

Poster Type—Large type for printing posters; the larger sizes of cast metal types are used for this work, but the largest types are made of wood. See *Wood Type*.

Postage Stamps.— The methods of making postage stamps have changed very greatly since they were first issued (in England, 1840). The early stamps were engraved by hand upon copper plates from which the impressions were taken. The engraving of a number of stamps on one plate,

in order to print several at one impression, was slow and expensive work. Later the stamp design was engraved on steel, and the common stamps of today are real steel engravings. The first step is to engrave the portrait in deep intaglio on steel which has been softened by a special process of decarbonization. Then the border of the stamp, with lettering and scroll work, is cut and the steel is hardened. This hardened die is next pressed with great force into the surface of a cylinder of softer steel, and produces the design in relief, the reverse of intaglio. This relief counterpart is in turn hardened and is used to press into another plate of softer steel, duplicating the design side by side, to make a plate from which stamps are printed. By this means of transfer any number of plates for printing may be made up with one original engraved die, insuring absolute exactness in duplicating the design, and an easy method of renewal of printing plates as they become worn or injured. The plate of dies as arranged in the press produces usually a sheet of four hundred stamps which, when finished, is cut in four and the stamps sent out to postmasters in sheets of one hundred. The general method of printing is similar to other copper and steel plate work — the ink is worked into the depressions of the die, the sheet laid on, and the impression made with a tympan

which forces the sheet into the depressions to take up the ink. Hand presses are commonly used for printing of this kind, but at the Bureau of Engraving and Printing at Washington, where all stamps are now made, power presses are used. Many details of processes in making stamps are secret, and much special machinery is used in this work exclusively. Stamps are also printed by setting separate electrotypes side by side and then recasting them together as a single solid plate. Stamps are also made by lithography. The printing of stamps by type and rules was an early and crude method, but was not satisfactory because of the ease of duplicating and consequently counterfeiting. The expense and difficulty of steel engraving make stamps printed in this way less liable to be counterfeited; it also makes possible the maintenance of a uniformly high quality in the printing of the stamp. The punching of lines of small holes, called perforating, in order to allow easy separation of stamps in a sheet, was began about 1854; previous to this the stamps were cut with scissors, then roulette wheels were used, as well as brass and steel perforating rules.

Postal Card—The official blank card used by the Post Office Department for carrying short messages at less than regular letter rate (one cent for domestic, two cents for

foreign). The regulation size is now (1910) 5½x3¼ inches. A quick and economical method of sending a notice or message through the mails to a number of persons is to print it on the back of postal cards. All printers should be familiar with the Post Office regulations relating to these cards, as well as to post cards, stamped paper, and similar matter which they will at some time or other have to deal with. A copy of these regulations may be obtained of any postmaster.

Postal Tube— Made of card or straw board, for mailing large prints, drawings, etc.

Post Card— A private mailing card (or post card) with a written or printed message, to be sent in the domestic mails, must conform to the following conditions: It must be an unfolded piece of card not exceeding 3⁹⁄₁₆ by 5⁹⁄₁₆, nor less than 2¾ by 4 inches; it must be in form and in quality and weight of paper substantially like the government postal card; it may be of any color not interfering with a legible address and postmark; it may or may not, at option of the sender, bear near the top of the face the words "Post Card"; face of card may be divided by a vertical line; left half to be used for message, etc., but right half is for address only; very thin sheets of paper which may bear both writing and printing may be attached to card, but must

completely adhere thereto; advertisements and illustrations may appear on back of card and on left half of face. Cards, without cover, conforming to foregoing conditions are transmissible in domestic mails and to Cuba, Canada, Mexico, Republic of Panama, and United States postal agency of Shanghai, China, at the postage rate of one cent each. When post cards are prepared by printers and stationers for sale, it is desirable that they bear in the upper right-hand corner of the face an oblong diagram containing the words "Place postage stamp here," and at the bottom of the space to the right of the vertical dividing line, "This space for the address." Cards which do not conform to prescribed conditions are, when sent in the mails, chargeable with postage according to the character of the message—at the letter rate (two cents per ounce or fraction) if wholly or partly in writing, or at the third-class rate (one cent per two ounces or fraction) if entirely in print. Cards bearing particles of glass, metal, mica, sand, tinsel, or other similar substances, are unmailable, except when enclosed in envelopes. Mailing cards entirely printed for advertising or other announcements, may be of any convenient size and shape, single or folded, and are chargeable at third-class rate.

Potash—An alkali dissolved and diluted with water, used to wash type forms. See *Lye*.

Pound Mark — The commercial sign representing pound in weight, ℔; also the £ denoting the pound sterling in English currency, etc. The character is derived from the Latin word *libra*, pound. In the absence of the ligature ℔ the letters lb. are used, and the plural erroneously formed as lbs.

Preface — This feature, with the title page and table of contents, is the most familiar "front matter" of a book. A preface is usually a word of explanation either from the author, the editor, or the publisher, and it will often be advisable to put it in a style showing some distinction from the regular text pages. In the ordinary book, however, there need be little in its typographic style to distinguish it from the regular pages of the work. The same type face and same size, with the heading similar to that of the chapter heads, will be a safe style to follow. If the preface is brief, occupying a single page, the lines may be leaded wider; if it is desired to keep a lengthy preface in small space, the lines may be set solid, or a smaller size type employed. Italic letter of a style to harmonize with the rest of the book often may be used with good effect for a short preface. The selection of a type that is distinctly different from the other parts of the work is not commended; nor should prominent initials or head-pieces be used if

these features are not employed in the other divisions of the book. When headpieces and initials are used at the beginning of chapters, they may be used for the preface, or they may be properly omitted and the prefatory page set in plain fashion.

Preliminary Matter—The title, preface, table of contents, etc., which comes before the main text of a book; the front matter.

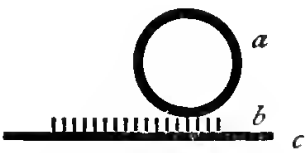
Press—The machine or apparatus used to press the paper on the type, engraving, or plate. For printing there are three distinct mechanical methods of imparting this impression. The first method is the platen press, whereby the paper is pressed with a smooth, flat surface on the flat face of the printing form, as illustrated here:

THEORY OF THE PLATEN PRESS.
a platen. *b* type form. *c* bed.

This was the principle of the first printing presses. The platen was a smooth block of wood, and the impression was given by means of a screw turning in a nut fixed to the upper part of the apparatus. The bed was originally of wood also, but later it was a flat stone, and about the year 1790 iron began to be used. (For description of the early hand presses, see Lockwood's

American Dictionary of Printing and Bookmaking; also De Vinne's *Invention of Printing* (p. 527 *et seq.*) The common forms of job presses such as the Gordons (Chandler & Price, Peerless, Challenge, etc.), Falcon, Golding, Pearl, Prouty, Universal, "Colt's Armory," etc., are platen machines. The usual sizes of these presses print forms from business-card size up to 14x22 inches.

The second class of presses is known as the flat-bed-and-cylinder style. In this the impression is given by the surface of a cylinder which revolves and gives the impression while the flat bed containing the printing form passes underneath.



THEORY OF THE FLAT-BED CYLINDER PRESS.
a printing cylinder. *b* type form. *c* bed.

Printing with a cylinder was first made practical about 1814 in England. (See *König Press.*) There are now many different makes of this style of press, and they are again classified in two distinct types: the drum cylinder (the older style), in which the cylinder makes one revolution while the bed moves forward for the impression and returns for the next; and the modern two-revolution style, in which a smaller cylinder makes one revolution for the impression and then, rising slightly,

makes another revolution without impression while the bed is returning to the starting point for the next impression. The drum cylinder is large and prints with only part of its surface, then rises slightly and continues its revolution while the bed returns for the next impression. In both kinds, the cylinder has a small opening in its surface, in which is fitted a rod with grippers that catch the sheet of paper at the proper moment and carry it around for the impression; then releasing the sheet when printed, so that it is carried on the receiving table by another part of the mechanism. There are many different varieties of these presses and they are employed for all classes of typographic and relief plate printing, as well as for lithographic work. The sizes made range from those printing forms 22 x 28 inches up to about 47 x 66 inches.

THEORY OF THE ROTARY PRESS.

a cylinder containing curved stereotypes or electrotypes. *b* the impression cylinder. The sheet of paper passes between the two.

The third class of printing presses is the rotary, or those which employ a cylinder for the printing form as well as for the impressional surface. Of this style are the machines used for daily newspapers and magazines of large circulation, in which

the paper is run from a continuous web or roll. The printing forms for machines of this kind are stereotypes (for newspapers) cast in curved shape, or curved electrotypes for the better grades of work. These plates are curved to fit the cylinder surface, and are held in place by clamps or catches at the sides of the plates.

In England the word *press* is restricted to the style of apparatus which we call the *hand press*, and the more complicated modern machine operated by power is known as a *machine;* in this country the word *press* is applied to all machines for printing, stamping, and similar purposes.

Press Board — A smooth board of seasoned hard wood, usually bound with a strip of brass or metal, used to press sheets of paper or bound books smooth and flat in a standing press. Bookbinder's board, a strong glazed cardboard, much used for cylinder covers, or packing, and for platen tympans, is also called press board.

Press Counter— A small attachment for registering the number of impressions printed. It is attached where a small lever is operated at each impressional movement of the press, this lever in turn operating a number of small wheels in the interior; on these wheels are the ten figures, 1 to 0, and as the counter is operated the figures are presented in sequence at openings on the face.

Pressman — One who operates a printing-press, or has charge of one. A press feeder is not usually termed a pressman unless he also makes ready and manages a press.

Press Points — See *Points*.

Press Proof—A proof made with care by putting the form on the press and making ready in one or more colors, as the work would be ultimately printed, in distinction from rough proof made by usual methods. Also the final proof, either from type or electros, passed by author or proofreader, signifying that the work is ready for printing. See *Proof*.

Press Punch — A small device for punching holes in a sheet of paper or card at the same time that it is printed. One style is secured to the tympan of the platen press, like a feed gauge, so that the edge of the sheet is fed between its two lips, one lip having a punch and the other the corresponding hole. The printing impression forces the two parts together and punches the hole in the sheet. Another style of press punch is like a large type, made of steel, and is locked in position with the type form. It punches the hole in the sheet simultaneously with the printing. This style has, inside of the round cutting edge, an ejector supported by a spiral spring which pushes out the small pieces of paper cut from the sheet, as soon as the impression is released.

Press Revise — A sheet from the form made ready on the press, to revise for final corrections, etc.

Press Room — The department of a printing establishment where presses are operated.

Presswork — This commonly includes all the operations necessary for printing, embossing, bronzing, scoring (when done on a press), and all kinds of labor which pertains to the press after it is erected and in running order. The setting up of a press is not now deemed part of a pressman's work, as it was formerly. On account of the complexity of modern machines, as well as the introduction of new devices, the erection of a press is done by a machinist conversant with the particular style of press. Presswork includes caring for rollers, inks, and paper, as well as the proper handling of the press and the form, and calls for skill in proportion to the class of printing done.

Print—An impression from a plate, engraving, etc. A book, periodical, or other publication which is no longer in stock is said to be "out of print," although it may be obtained of second-hand dealers or others.

Print Paper—The common grades of unsized paper, such as used for newspapers, magazines, books, etc., as distinguished from writing paper, wrapping paper, etc.

Printer—One who follows the occupation of printing, either as workman or employer; nowadays a very comprehensive term, which should have some qualifying adjective, such as book printer, newspaper printer, job printer, lithographic printer, plate printer, etc. Very inconsistently the term "printer" seems often to be applied to those who are merely compositors and have little or nothing to do with presswork, or printing.

Printer's Bible — A Bible printed prior to 1702, mentioned by Rev. Cotton Mather, containing the word *printers* in place of *princes* in Psalm cxix: 161. "Printers have persecuted me without cause."

Printer's Devil—The errand boy in a printing office. See *Devil.*

Printing Ink — A mechanical combination of boiled oil and black or colored pigment, used to make visible and permanant the impression of type, engravings, etc., on paper. Printing ink is not at all like writing ink, but is more like paint, with certain qualities which are necessary for its peculiar use. It must distribute in a thin film freely and easily, and it must work sharp and clean, without spreading; it must adhere to the type readily, and yet come off as readily and adhere to the paper; it must not dry too quickly, but should dry hard in several hours after

being deposited on the paper. For many printing inks linseed oil is used, often with some rosin oil; and rosin oil alone is used for the cheaper, coarser grades. Linseed oil is prepared by boiling at a high temperature until all the moisture and volatile substances are eliminated, and for the stiff varnishes the greasy portion is burned out, and certain chemicals are generally added to give drying qualities. Ink is made by mixing certain proportions of this varnish and color pigment, the mixture varying in quantity and quality according to the nature of the pigment and the kind of ink required. Different pigments have been used for making black ink — black minerals, lampblack, or soot, ivory black, and carbon black — but carbon black is now mostly used because of its superior covering quality and density. Black ink, however, is often toned with a little blue to give it depth and richness, as the natural pigment has a reddish or brownish hue.

Color pigments are derived from three sources: mineral (native and artificial pigments); vegetable (native pigments, lakes and indirect products); animal (native pigments, lakes and indirect products). In the native mineral pigments, genuine ultramarine blue stands first in brilliancy of color, and although matched artificially it will never be equalled for transparency

and durability. Yellow ochre, raw sienna, raw umber, and Indian red, are all made of imported earths. Artificial mineral pigments are derived through chemical action, and include such colors as vermilion, artificial ultramarine blue, Chinese white, pure scarlet, emerald green. In fact, the advance in chemistry has been so rapid that almost any pigment can be closely duplicated by artificial means. Gamboge, a gum from a tree in Ceylon; indigo, from the leaves of the indigo plant; madder lake, from the roots of the madder plant; and yellow lake, from the quercitron bark, are some of the pigments of the vegetable kingdom. Indian yellow, a deposit from the urine of the camel; sepia, a secretion of the cuttle-fish; carmine, made by crushing the cochineal insect; and indirectly, lamp-black, the soot of burning vegetable oils, are products of the animal kingdom. All pigments are not suited for printing ink manufacture. Many of them, while extremely useful in other ways, do not possess the chemical properties for combining with varnish and produciug the clear, even impression that ink must possess.

Covering power is one of the most, if not the most, important property of a pigment. In comparing samples of different makes of the same color, that sample which shows the strongest covering powers is considered the best, other qualities being equal.

Covering power varies greatly in different pigments. Some pigments are recognized as being transparent and are used as such. Carmine, lakes, ultramarines, etc., belong to this class. Coloring power is not infrequently confused with covering power, but it is a distinctly different property from the latter. For example, a color may possess great coloring power and yet be deficient in covering power. To illustrate: Prussian blue is one of the most powerful coloring pigments known to the color world, yet in body it is almost transparent. This color and others of the same characteristics are therefore chiefly dealt with from the point of coloring power. In making ink, great care must be taken as to the order in which the different ingredients are added. Some colors must be ground hot, some fast, and some slow, and the skill in doing these constitutes a good part of the formula.

The kind of paper stock used should determine the grade of ink. Heavy, rough, colored papers need entirely different ink from smooth, white paper, and require opaque colors — that is, ink made from such pigments as do not allow the color of the stock to show through them and transmit this color into their own. A transparent red printed on a green stock turns brown, but an opaque cover ink retains its own color because it is so dense that no

light is able to penetrate through it. Cover inks should be of a heavy body and so full of color that one pound will have almost enough color in it to make two pounds of ordinary transparent ink. Great care is used in selecting the pigments for these inks, and only those are used which are known to have great covering capacity. Ink for enamel-coated papers is of an entirely different nature, and must be made according to the surface of the paper.

Printers' Marks—Emblems or devices used by printers on their work, serving the purpose of trade-marks. Among early printers these devices were common, and these are now of considerable interest and significance. Many modern printers and printing firms use devices as imprints. See *Imprint.*

Printer's Oblong—A rectangle in which the diagonal line from one corner to another is twice the length of the shortest side. This is approximately the shape of the usual book page, and is a pleasing proportion either as an upright or a "broad" page.

Printer's Ream—In England, 516 sheets.

Priory Text—A style of black letter or Old English based on early manuscript and printed work. It has many variations and is called by other names. See *Old English.*

Specimen of Priory Text

Process Engraving — The general term applied to printing surfaces produced by chemical and mechanical means; more especially the photo-mechanical processes by which zinc etchings, halftones, etc., are produced. The relief etching, or process block, is the simplest and cheapest method of making an engraving. By this process the metal, usually zinc, is eaten away with acid in the white places of the design, the printing lines and dots being protected by a composition which resists the action of the acid. The design may be drawn on by hand or transferred from another surface, but the more common method is by photographic process, as follows: The thin, polished zinc or copper plate, coated with a solution of fish glue or albumen mixed with a bichromate, is exposed to light under a reversed photographic negative of the picture or design, which changes the nature of the coating where the light hits it. The plate is then washed with water, which removes the unchanged part of the coating, leaving the lines of the picture in hardened glue or albumen. It is then etched with the acid, and after the large blank spaces are cut out a little deeper, the plate is trimmed and mounted type-high. Zinc etching is the process of engraving commonly used for newspapers and for the ordinary grades of periodical and commercial work. The copy for re-

production is usually drawn with a pen on white paper or card, with perfectly black ink, and all the degrees of light and shade must be produced by dots and lines of varying widths and distances apart. Photographs, wash-drawings, and fine-grained or tinted pictures must have their essential parts translated into distinct lines in order to be engraved by this method.

Halftone engraving is done practically by the same methods as zinc etching, the difference being that, in photographing, a screen is interposed between the sensitive plate in the camera and picture or design. This screen is placed near the plate, and, the light passing through it, the object on the negative is broken up into a mass of small squares, or dots which are larger or smaller as the corresponding parts of the copy are darker or lighter. This screen negative is then placed beside a polished and sensitized copper (sometimes zinc) plate, and after exposure to light, the plate is developed and manipulated so as to protect the dots on its surface from the action of the acid with which it is afterward etched. The plate is then trimmed and mounted, as for a zinc plate. The halftone screen varies in fineness from 80 to 250 lines to an inch, according to the coarseness or fineness of the plate required, this being determined by the finish of the paper to be used and

the care with which it may be printed. The coarse screen is best suited for the rapid work and cheaper paper of a daily newspaper, while a screen of 125 to 200 lines, on smooth, coated papers, printed on slow presses, gives finer results in the picture. The finer the screen used, the shallower the plate can be etched, and smooth paper and fine ink must be used in order to print it clearly without blurring.

Proof—After types are set their correctness must be verified before they are ready to be printed. For this purpose a trial impression is taken, in order that the composition may be examined and needed corrections made. This trial impression is the printer's *proof*, and the time and care given to it is a matter of very great importance in every printing room. By any of the usual methods employed in taking proofs, the first operation, after the type is secured so that it will stand squarely on its feet, is to roll ink on its face; then a sheet of paper is laid on and impressed so as to take a transfer of the ink. This impression may be made:

First — By pounding the paper carefully on the type with a flat-faced, felt-covered block called a proof planer.

Second — By placing the type on a roller proof press, where the impression is made by moving over it a heavy iron roller covered with thick cloth or felt.

Third — By placing the type on a hand-press. Here the type is inked, the sheet laid on, then the tympan turned down, the bed run under the platen, and the bar pulled over. To "pull a proof" is to take it by this latter method, but the term is commonly meant to take a proof by any method.

In many cases a number of successive proofs may be taken from the same page of type during its preparation for the final printing; and in book-printing houses these several proofs may be taken at different stages by all three of the above methods. When the compositor finishes his work of setting the lines and they are locked in the galley by means of side-stick and quoins, the *first proof* is usually taken on a roller press. After this proof has been examined by the proof reader, and the necessary corrections made in the metal, another proof is taken. If there are many changes, or the work calls for extra care, other proofs may be required. A *revise* proof is one that is taken after correcting the type, to see that all corrections marked on the previous proof have been properly made and that no new errors have crept in. After the galley matter is corrected and made up into pages, with headings, page numbers, notes, etc., the pages are tied up with strong strings and are again proved on a hand-press. Possibly

the pages may need several revisions and other proofs at this stage; or, if they are to be electrotyped, guard-lines are placed around each page and they are locked in foundry chases (in pairs, if they are pages of ordinary size) and *foundry proofs* are pulled. The final proofs are taken when the pages are imposed and locked in the chase, ready for the press. At this stage the form of eight, twelve, or more book pages is too large for the hand-press, and in order to avoid loss of time on the large printing press, while waiting for final revision, a proof is taken by beating with the proof planer. See *Proof Planer*.

A good quality of moderately stiff ink should be used for taking proofs; to use a cheap, thin, or oily ink is not satisfactory and in the end is the most expensive. If the ink is to stay on the roller and ink-slab all day, a quick-drying ink should be avoided. Use the smallest quantity of ink necessary to get a distinct impression, and distribute it thoroughly on the ink-slab. If the roller has too much ink, a muddy proof will be the result. A gray proof is preferable to a smutted one, or one that the proof reader cannot handle without rubbing it dirty. A proof with too much ink or too much impression makes difficult the detection of bad letters. To take off any surplus ink that may have been needed for a previous form, run the roller slowly over a sheet of waste paper.

The paper used for proofs should not be of the poorest quality. Book paper with a reasonably smooth surface, slightly dampened, will suffice for office proofs and galley proofs. Hand-press proofs from made-up pages, intended for the author or customer, should be made on good paper of clear color and strong enough to bear handling. Coated paper is sometimes used for special proofs in which engravings or fine lines occur. Each proof sheet should have a white margin of an inch or more on the sides, to permit of marking corrections by the proof reader. A number of pages or galleys, or a succession of proofs of the same work, should be made on sheets of the same size and, if possible, of the same grade of stock. Proofs taken on odd scraps of paper of different sizes make trouble for the proof reader and the foreman, and cause confusion and liability to error in keeping track of the work. A supply of proof paper, cut in the several sizes frequently used, and kept in a convenient place, is the only satisfactory method of securing neat and orderly proofs.

Proof Planer—A block of hard wood about 7 x 3½ inches and 2 inches thick, having its face covered with a piece of felt or thick cloth, used to take proofs. The type or electro is inked and a sheet of proof paper is dampened evenly all over with a sponge,

so that it is limp but not too wet. The side of the sheet that is not sponged is then laid on the type; the proof planer, held in one hand, is carefully placed on the sheet with the cloth side down, and with a mallet in the other hand the planer is hit with a steady blow to press the paper on the type. Some care and practice is needed to get just the right quantity of ink on the type, the right degree of dampness in the sheet, and the right kind of blow on the back of the planer to produce a clear impression. If the page or galley matter is too large for the planer to cover at one blow, the pounding is started near the top of the matter and as each blow is struck the planer is moved over the surface until the whole has received the impression. Care must be taken to hold the planer steady on the type, and to hit the planer so that the force of the blow will be exactly perpendicular, otherwise the least disturbance of the sheet sideways will result in a slurred proof. The planer must be held firmly and perfectly level, and not allowed to slip sideways or rebound. With a large mallet a steadier blow may sometimes be given by holding the mallet-head upright and hitting with the end of the handle. Special care should be taken not to beat the planer too hard on open parts of a form or on exposed lines, where even a slight blow will break through the paper and also batter the types.

Proof Print— An early impression of an engraving, taken with more care than an ordinary proof.

Proof Press — The two most common styles of presses for taking proofs are the platen hand press (see *Hand Press*) and the roller galley-proof press. For most kinds of work the hand press is superior. The roller press is a simple, economical apparatus, takes up little room, and is more especially adapted for taking proofs of long galley matter. The common roller proof press has an iron frame upon which is mounted an oblong, flat bed, also of iron. On two sides of this bed are ledges upon which an iron cylinder, having its face covered with thick, strong cloth or felt, may be moved back and forth. When the galley of type is placed on the bed, and the type has been inked with a hand roller, a strip of paper is laid on and the cylinder moved over it to give the impression. Dry paper may be used for small forms, or even for galley proofs, but paper that is slightly dampened will be more satisfactory. The cylinder and the ledges upon which it rests are adjusted so that it gives the right impression with the galley under the type. In the absence of a galley, as when the page is made up and tied with a string, a sheet of metal or thick mill-board is placed under the type to bring it to the required height. Differences in the height of type,

caused by varying thicknesses of galley-bottoms, are regulated by adding sheets of paper or card on top of the proof sheet or under the type or galley. Careful attention to the impression is necessary on a proof press of this style. Too often this work is left to careless boys, who habitually make the impression heavier than is needed, to the speedy ruin of the type and engravings.

In daily newspaper rooms galley proofs are taken on presses of the roller style, with the additional improvement that the type is inked and the paper fed from a roll automatically, the needed apparatus being attached to a carriage that moves back and forth with the cylinder that gives the impression. By this arrangement the only labor necessary is to place the galley of type on the bed and move the roller carriage over it by means of a crank.

A recent invention is a press by which the impression is given by a curved surface, covered with felt, like the section of a printing cylinder. This is geared to the frame, and, by pulling a handle, is turned over onto the form, which has been inked in the usual manner and has the proof sheet laid on it.

Proof Puller — The person, usually a boy, whose duty it is to take proofs at the press in a newspaper or book office employing a number of hands.

Proof Reader—One who reads proofs. The work of a proof reader is to read the proof sheets and mark any needed corrections with pen or pencil. Incidentally there may be other duties assigned to him, such as collecting and arranging copy, revising proofs to see that corrections have been properly made, taking care of copy after it has been used, until the work is completed and copy is bundled up for preservation or otherwise disposed of. Different usages are in vogue in different printing houses regarding these details. In small establishments one person may be able to attend to the reading of proof and all details connected therewith; but in larger shops, especially where there is book, periodical, and other work calling for much reading, several persons are required and the work is divided so as to secure expeditious and accurate results. The proof reader's usual assistant is the *copy holder*, or one who holds and reads the copy aloud while the proof reader looks on the proof sheet and marks the errors. On work of an important nature, like historical, scientific, or technical books, the reading of proofs will be done by several proof readers in turn, in addition to the author's reading. The first reader will commonly look for the compositor's errors, such as misspelling, imperfect and wrong-font letters, inverted letters, bad spacing, irreg-

ular indentions of paragraphs, deviations from copy, and other typographical matters; obvious mistakes in grammar, incorrect use of words, and similar literary errors will also be noted, and either corrected or called to the attention of the author or the editor.

A practical knowledge of the compositor's work is necessary to read proof successfully. To be competent, a proof reader should have, in addition to a thorough knowledge of printing, a quick eye, a good acquaintance with literature and general affairs, as well as thorough familiarity with punctuation, spelling, use of capitals, etc. To the compositor and proof reader there are a thousand and one small matters that require correction, which do not appear to the ordinary reader of the completed work. The author may capitalize a word in one place and omit the capital in another similar case; an abbreviation may be used once and the same word spelled in full elsewhere; figures used in one line and the number spelled out a few lines further on; words of variable spelling may be one way in one page and according to another dictionary on the next page; the use of punctuation marks may be incorrect and inconsistent; statements of fact even may be inaccurate, through thoughtlessness or lack of technical experience. Then there is "style of the office," or the

publication, which must be adhered to in certain matters. This "style" is the adoption of certain forms with regard to abbreviations, capitals, italic, kind of type, etc., in order to maintain uniformity.

Proof Reader's Marks—Used to indicate required corrections in type. The following is a list of proof reader's marks in common use. An example of their use is shown on page 230.

Dele; take out. (See note below.)

Turn inverted letter right side up.

Let it stand; change made was wrong.

Take out character and close up.

Change imperfect letter.

Period.

Em-quad, for indention, etc.

Apostrophe.

Comma.

DELE, *imperative sing.* of L. *delere* to destroy, [Cf. DELETE]. (*Print.*) Erase; remove;—a direction to cancel something which has been put in type; usually expressed by a peculiar form of *d.*—*Webster's Dictionary.*

Space.

Caret; indicates where to insert.

Hyphen.

No paragraph; run in.

Wrong font — size or style of type.

Transpose.

Use roman letter.

Use italic.

Query; word, spelling, etc., in doubt.

Use lower-case letter.

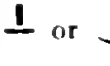
Move line or word to right or to left,.

Take out lead.

When omitted words cannot be conveniently written in the margin.

Signs or abbreviations ringed in copy should be spelled out.

Make spacing of words uniform.


Push down space, quad, etc.

Straighten up ends of lines.

Close up.

Raise word, line, etc.

Lower word, or line, etc.

Cap. Use capital letter.

sm.cap. or *s. c.* Use SMALL CAPITALS

Three lines under words signify CAPITALS.

Two lines signify SMALL CAPITALS.

One line signifies *italics*.

Use heavy-face type.

Use ligature (fi, ff, fl, ffi, ffl, etc.)

Proof Sheet — A printer's proof.

Proof in Slips — That is, as the matter is on the galley, before it is made up into pages.

Publish — To make known publicly: to put forth; to issue; as a newspaper, magazine, book, etc. A publisher is usually understood as one who makes and sells printed matter at first-hand. He need not be a printer, engraver, or binder, but many publishers carry on their own printing, binding, or engraving rooms, while others hire one or all these operations done outside. Printing is the manufacture and publishing is the selling of printed matter.

Pull a Proof—To take a proof; originally, to pull over the bar of a hand press and take an impression. See *Proof.*

Pull-Out—Types which have been pulled out by the suction of inking rollers on the press. Pull-outs are due to faulty workmanship in justifying and locking up, or they may be laid to the pressman who unlocks a form on the press for the purpose of planing down, changing register, etc., and does not relock the form so as to hold all the type in place.

Pulp Board—Stiff, thick cardboard of cheap grade, made of wood pulp rolled into sheets, as distinguished from pasteboard, which is formed by pasting sheets of card and paper together; used for box-making, book covers, etc.

Punch—In type founding, an original die of the letter or character to be cast. The letter is cut on the end of a small bar of soft steel, which is afterwards hardened and becomes the punch. This punch is used to drive an impression into a bar of copper, which in turn becomes a matrix to be used for casting the face of the type. See *Type Founding.*

Punching Machine—For punching holes of various sizes and shapes in cards, signs, pamphlets, etc. They are made in several styles, operated by a hand lever, by foot treadle, or by mechanical power.

Showing use of Proof Reader's Marks

THE SCHOOL OF PRINTING

The School of Printing was established in January, 1900 by the North End Union, under the supervision of a number leading master printers of Boston. It has had to demonstrate its purpose in practical and is gradually being recognized by those who relize the important need in the trade of a method of Technical instruction.

The aim of the school is to give fundamental and general instruction in printing-office work, and to offer young men entering the trade an opportunity to learn the things which are becoming each year more and more difficult for the apprentice to obtain in the restricted and specialized conditions of the modern workshop. The course study embraces book commercial and advertising composition, and platen press-work. The School is supplied with hand several job presses, roman and display types of various styles, and the usual furniture and material of a modern printing office. The School is continuous and pupils may enter at any ~~one~~ time. The hours are identical with those of a regular workshop, from 7.40 A.M. to 5.45 P.M., excepting Saturday afternoon.

The tuition fee for one year is $100. Applicants must be sixteen years of age or over.

Further information may be obtained by addressing Samuel F. Hubbard, 20 Parmenter Street, Boston.

Superintendent

[For explanation of the above marks see pages 226-8.]

The Corrected Proof

THE SCHOOL OF PRINTING

THE SCHOOL OF PRINTING was established in January, 1900, by the North End Union, under the supervision of a number of leading master printers of Boston. It has had to demonstrate its purpose in practical results and is gradually being recognized by those who realize the important need in the trade of a systematic method of technical instruction.

The aim of the School is to give fundamental and general instruction in printing-office work, and to offer young men entering the trade an opportunity, through a system of indentured apprenticeship, to learn the things which are becoming each year more and more difficult for the apprentice to obtain in the restricted and specialized conditions of the modern workshop.

The course of study embraces book, commercial, and advertising composition, and platen press-work. The School is supplied with one hand-press and several job presses, roman and display types of various styles, and the usual furniture and material of a modern printing office.

The School is continuous and pupils may enter at any time. The hours are identical with those of a regular workshop, from 7.40 A.M. to 5.45 P.M., excepting Saturday afternoon.

The tuition fee for one year is $100. Applicants must be sixteen years of age or over.

Further information may be obtained by addressing SAMUEL F. HUBBARD, *Superintendent*, 20 Parmenter Street, Boston.

Punch Press—A small machine for punching holes in cards, paper, etc., operated by a hand lever or treadle.

Punctuation—The division of sentences and parts of sentences in composition by peculiar marks or points (see p. 233). "Close" punctuation is characterized by the use of many points, especially the comma, and was formerly the common practice. This method often meant the insertion of points in places where they were not necessary. "Open" punctuation is now the more common practice, and means the consistent omission of points in all places where they are not required to make the sense clear and unmistakable. Modern practice omits punctuation marks in book title pages and in certain legal papers, as well as at the ends of headlines and lines in advertising and bold display. A useful treatise on this subject, as it relates to the compositor, is Mr. Theodore L. DeVinne's "Correct Composition," chapter 15.

Punctuation Marks—Certain marks and signs used in such places in language composition as to bring out the sense clearly. They are guides chiefly for the eye in reading, and, although many of them are generally used in accordance with well defined rules, there are greatly divergent opinions and practices in vogue, which make the study of their proper use a difficult one for the

young compositor. The modern system of punctuation was developed after the invention of typography, primarily by Aldus Manutius and his family, learned printers of Venice, during the sixteenth century. Old manuscripts, dating as far back as the third century, are written entirely in capitals, without spacing between the words and without marks of punctuation. Later, words were separated by spaces and the sentences were indicated; then parts of a sentence were pointed off by a slanting stroke, thus /, called a *virgule*, which later developed into the comma.

Following is a list of punctuation marks in common use, together with other signs used to indicate correct pronunciation, etc., and to otherwise assist in making composition clear and understandable.

, Comma.
; Semicolon.
: Colon.
. Period.
— Dash.
—— Two-em dash.
? Interrogation.
! Exclamation.
( ) Parentheses.
[ ] Brackets.
' Apostrophe.
- Hyphen.
/ Acute accent. (é)
\ Grave accent. (à)
^ Circumflex accent. (ê)
~ Circumflex *or* tilde. (ñ)
– Long *or* macron. (ā)
˘ Short *or* breve. (ĕ)
¨ Diæresis. (ä)
ȿ Cedilla. (Ç)
^ Caret.
“ ” Quotation marks.
{ } Braces.
* * * Ellipsis.
. . . Ellipsis; *also* leaders.
* Asterisk.
† Dagger *or* obelisk.
‡ Double dagger.
§ Section.
‖ Parallels.
¶ Paragraph.
☞ Index.
⁂ *or* ⁂ Asterism.

Pyramid Heading—A display heading set in half-diamond or inverted pyramid form, the top line being longest and succeeding lines gradually shortened; used in newspaper and similar work.

Quads—Cast metal blanks, wider than the three-to-em space, used to fill the larger white spaces in lines, such as to indent the first line and to fill out the last line of a paragraph. The orginal term was *quadrats* (that is, a square, or with four equal sides), but the shorter term is commonly used among printers. Quads are necessary parts of every font of type, and are made in sizes to accompany all type-bodies. There are generally four forms: en, em, two-em, and three-em. The en quad is half the square of any given size of type-body ( ); it is really a thick space and is commonly used as such, being next wider than the three-to-em. The em quad is a square of the type-body ( ) and is the usual blank to put at the commencement of paragraphs in ordinary reading matter, unless the lines are very long, in which case the indention may be two or even three ems. For wide blanks two-em quads ( ) and three-em quads () are provided. Quads are cast high or low, to match the spaces of a font of type. See *High Spaces and Quads*, *Low Spaces and Quads*, *Spaces*.

Quad Box—The lowest right hand corner apartment in the ordinary lower-case. It holds the two-em and three-em quads—and when a careless, untidy "slob comp" gets at the case for a short time it also contains a miscellaneous assortment of pi and débris which he is too lazy to put in their proper places. Keep the quad box, as well as every other box in your case, in good order.

Quadri-color—A name given to a process of plate-making for color printing, using a plate for each of the three primary colors and a fourth plate for black ink; four-color printing. See *Three-color Work*.

Quadruple—A sheet of paper, a form, or other work four times the size of a smaller one, or a smaller form duplicated to make four of a kind.

Quarterly—A publication issued once every three months.

Quarter-sheet Card—Among printers, commonly understood as one quarter of the size 22 x 28 inches, which is a standard size of many kinds of cardboard. Quarter-sheet is a convenient size for window signs, small placards, etc.

Quartertone—A term sometimes applied to coarse halftones made on zinc for newspaper work; 65 lines or less to an inch; a newspaper halftone.

Quaternions—Sheets of two leaves, or four pages, nested together to form a pamphlet or section of a book

Quarto—A sheet of paper (approximately 18 x 24 inches, or the size known as medium) folded twice, making four leaves, or eight pages. Regular quarto is this size folded in cross sections, making the leaf 12 x 9 inches; long quarto is the sheet folded twice in the same direction. Other quartos are demy quarto (8x10½ inches), cap quarto (7x8½ inches), royal quarto (9½x12 inches), etc. A size of book in which the leaf is quarto. In publishers' notices quarto is often abbreviated to *4to*. See *Folio*, also *Octavo*.

Quarto or Quarter Medium—A size of press (about 10x15 inches) large enough to print a quarto page. A half medium press is one which will take a half sheet of medium paper (18x24 inches), and an eighth medium press (about, 7x11 inches) one which will print a sheet one eighth of medium. These terms are not now so common as formerly, as they are not precise enough to designate the many variations in sizes of machines now made; the more accurate custom is to state the actual sizes in inches.

Quill—A large, strong feather of a goose, swan, or other bird, made into a pen for writing, before the invention of steel pens; hence, symbol of pen or writing instrument.

Quarto Galley—A galley about 10x16 inches, or wide enough to hold quarto pages.

Query—That is, inquire further, look this up; used as a marginal note in copy or on proofs, to call attention to some matter in doubt. Sometimes represented by the question mark (?) or by *Qy.*, *qy.*, *Qu.*, *qu.* To *query* is to mark with a query.

Question Mark [?]—The interrogation point. The apprentice should notice that this point and the exclamation mark always require a thin space to separate them from the preceding word, unless the point is cast with a shoulder on the side. They should also be separated from the following word by a thick space or two spaces. Bad? Of course it is! Better? Do it right!

Quire—Twenty-four sheets of paper, or one twentieth of a ream of 480 sheets; if the ream consists of 500 sheets, as it often does now, the quire is twenty-five sheets. Originally, a set of four sheets of parchment or paper folded so as to make eight leaves, the ordinary unit of construction for early manuscripts and books. Formerly all paper came from the mill folded in quires or fractions of a quire, as boxed writing paper is now sold by stationers. To *quire* paper is to fold it in quires or parts of a quire. A book in separate sheets or signatures, not sewed or bound, is said to be *in quires*. See *Ream*.

Quirewise—A booklet or pamphlet imposed so that the folded sheets will nest or fit into each other in one section and the work may be saddle-stitched; in distinction from single or folded sheets that are placed side by side and must be side-stitched or sewed. To print on the first and third pages of a sheet, so that a number of sheets may be folded together and stitched through the middle.

Quoins—Small wedges used for locking up forms; made of hard wood and also of iron, in several varieties. The old style quoins were small pieces of wood, and were driven up with mallet and shooting-stick between the chase or strip of furniture and a beveled stick; the gradual driving up of the quoins locked the form until it was tight enough to lift. This method of locking up has been generally superseded by the use of iron quoins and other devices which serve the purpose with less trouble in shorter time and with greater accuracy. Two familar styles of these mechanical quoins are known as the Hempel (see *Hempel Quoin*) and the Wickersham (see *Wickersham Quoin*). In daily newspaper offices the forms are locked up by means of steel beveled sticks and screws fitted into the sides of the chase; these may be operated very quickly by the use of a wrench.

Quoin Key—The T-shaped piece of iron used to operate metal quoins in locking forms.

Quotation—An expression, a statement, or a passage repeated as the utterance of some other writer or speaker. It is usually, but not always, enclosed in quotation marks. (See *Quote Marks*.) In composing room parlance pieces of a kind of hollow metal furniture are known as quotations; more exactly *Quotation Furniture*. See *Furniture*.

Quoted Matter—That which is enclosed with quote marks.

Quote Marks, or Quotes [" "]—Brief terms for quotation marks, used at the beginning and ending of quotations. In English composition these are commonly two turned commas at the beginning and two apostrophes at the end. In reading proof, the copy holder who reads aloud usually terms the first as "commence quote" or simply "quote," and the other as "close quote."

Rack—A frame-work for holding cases, letter boards, etc.

Rag Paper—Made from linen or cotton rags; the better classes of paper are made from linen rags. See *Paper*.

Ramage Press—An old-time hand press, first made of wood entirely, but later made of iron, by Adam Ramage of Philadelphia, about the first of the last century; said to be the first press made in this country.

Ratchet — A small instrument for turning the screws of patent blocks or electro bases.

Reader—Sometimes applied to the proof reader. In this country, the person who reads manuscript and other copy sent in for publication. Publishing houses now have many such literary readers to whom new works are submitted for examination before printing. An advertisement in the form of ordinary reading matter similar to the regular text of a newspaper or periodical is also know as a reader; a brief advertisement of this kind is a *reading notice.*

Reader's Marks—The proof reader's marks on a proof, in distinction from author's marks or corrections, making changes from original copy.

Reading for the Press—Proof reading; more specifically, reading final proofs before printing.

Ream—There is much confusion in the paper and printing industries because of the variation in the number of sheets of paper which make a ream. At present a ream may be from 472 to 516 sheets, according to the class of paper. Heretofore the common ream of writing or printing paper has contained 480 sheets, but there is a growing practice to make it 500 sheets, and many kinds of printing paper are now measured in this manner.

Recipe Mark — The apothecary or medical sign ℞, used at the beginning of prescriptions. (Latin *recipe*, to take.)

Record Type—The peculiar letters, signs, accents, etc., used in reprinting with exactness old books, records, and documents.

Recto — The first page of a leaf, or the right hand page of a pair, 1, 3, 5, etc. The other side, 2, 4, 6, etc., is *verso*.

Re-engrave—To finish an engraved plate, like a halftone, by going over it with engraver's tools; an operation requiring great skill.

Re-etch — In the engraver's work, to give a plate, in whole or in part, a second acid bath for the purpose of further etching; this is often done by brushing the parts with acid with a small hair brush.

Reference Marks — The signs which come with fonts of roman capitals (asterisk * dagger † double dagger ‡ section § parallel ‖ paragraph ¶) have been the common marks to refer to foot-notes in book pages, and they serve the purpose when used only occasionally; but when many references occur on one page the characters are clumsy and objectionable. Superior figures[6] and letters[a] are now more often used; they are neater and permit of any number being used without repetition or confusion. Superior figures and letters are made by type foundries for all

the usual sizes of book-type, but when these are not at hand the compositor may improvise them by justifying small size types into the line. In a ten-point line, for instance, a figure and an en-quad of six-point, with two six-point three-to-em spaces placed sideways below, will justify accurately and quickly.

Register — To adjust the pages of a form so that they will print exactly on the back of those printed on the first side; to impose a form or to fix the gauges on the press so that the pages, when printed back to back on the sheet, will strike in the proper places. To print two or more colors beside each other, or one over the other, so that they will print in their proper places.

Register Sheets — Special or extra sheets used as guides for registering a second or subsequent form of a work. When a sheet is to be printed with more than one form, as for colors, or to be backed up sheetwise, there should always be some extra sheets printed on the first form, to be used in registering the other forms.

Reglet — Thin strips of wood similar to leads, only larger; they are used in posters and other large work where metal would be cumbersome.

Reiteration — The printing on the back of a sheet already printed; printing the second side. A term now rarely used.

Relief Printing — That done from raised surfaces, like type, wood cuts, zinc and halftone plates; in distinction from intaglio work, such as copper and steel plates, or from lithography, which is chemical printing from flat surfaces.

Religious Signs — The cross † and maltese cross ✠; versicle ℣; response ℟; and other signs used in prayer books, church rituals, etc.

Reporter — One who gathers news and writes for a newspaper.

Reprint — Copy for a book or other work which has already been printed, in distinction from written manuscript. A second or new printing of a work. Reprint copy is, naturally, easier to handle than manuscript, on account of its legibility. A reprint of a work may be done in different type and style than the original; when an exact reprint is meant it is *fac simile.*

Retouch — To go over, with brush or pen, a drawing, photograph, or other copy which is to be engraved, and touch up important details or tone down unimportant or useless parts; to prepare imperfect copy for making a good engraving.

Revise—A proof taken after corrections have been made; to compare a proof so taken with the one on which errors are marked, to see if corrections are properly made. See *Proof.*

Ring-mark—Changes from original copy are marked on proofs by drawing a circle around them; these changes may be made by the proof reader or author, and are not chargeable to the compositor. If the compositor is on piece-work, he is paid extra for ring-mark corrections. A circle or ring drawn around an abbreviation, sign, etc., in copy is a direction that the word should be spelled in full.

Rise—A form is said to rise when it may be lifted from the imposing stone without letters dropping out. A form locked too tightly, or imperfectly justified, in which quads, leads, furniture, etc., work up to the the level of the type and show on the sheet, is also said to rise, or work up.

Roller—A metal rod covered with an elastic composition, used to spread ink over the type or other printing surface. The early method of spreading ink on the form was with balls, which were small round cushions, covered with soft leather and stuffed with wool. These had handles and were used in pairs; a dab of ink was placed on one, and by beating them together it was spread on their surfaces, and afterward dabbed on the printing form. The invention of inking rollers was contemporaneous with that of the cylinder press (1814). The first rollers were covered with buckskin or a similiar leather, but were not suc-

cessful; afterward a composition of glue and molasses was used. This composition was first employed in the potteries of Staffordshire, England, to put designs on dishes with irregular surfaces. An elastic material, which easily took up ink and as readily deposited it again, was peculiarly adapted to the printer's use. The early rollers of this modern style were made of glue and molasses only, a mixture which possessed the peculiar tackiness that was required; but they were expensive, because they were short-lived—a few weeks at the most, under favorable weather conditions. Then glycerin was added to the composition, and the quality of durability was given to the roller. Glue-and-molasses rollers dried and shrunk rapidly and a dry, glassy skin formed on the surface in a few days; this tendency was overcome by using glycerin. The peculiar qualities of glycerin are that it does not evaporate and does not freeze at any temperature, and consequently heat and cold have little effect upon its consistency, so that rollers in which it is used are less affected by variations in the temperature; glycerin also has a strong attraction for moisture and will increase in weight if exposed to damp air. It is this last quality of glycerin that is the cause of most of the pressroom troubles with rollers, especially in warm, damp weather, as it is then the rollers become

"green," or soft and watery, so that they will not take up the ink from the distributing surface and carry it to the depositing surface. Rollers are now made by many different formulas. Their manufacture has become a specialized branch of the printing industry, and each maker produces them according to formulas that are the result of much experiment with new substances and methods, so that the exact composition of a modern roller is a good deal of a trade secret.

In brief, a roller is made by first having a metal rod, or core, placed in the center of a cylindrical mould, the inside of which is polished and oiled. In order that the composition may hold firmly on the core, the rod is painted and wound with strong twine; in the case of large rollers for cylinder presses, the iron rod is covered with a wooden sheath to enlarge its size, and this is then wound with a cord. The core being placed in the mould and held by end-pieces to keep it in the exact center, both are then slightly warmed and the melted composition poured in, and the whole allowed to cool. The warming of the mould is important, as, if it were cold, the hot composition will suddenly chill against the cold iron and leave streaks in the face of the roller. The old hand-method was to cast rollers one at a time, and to pour the composition in at the top.

This method is still in employed in a limited way, but the modern roller maker, who casts them in wholesale quantities, has his moulds arranged in groups, in a large steel barrel, called the "gatling" method. He also avoids air bubbles and other imperfections by pumping the composition into the bottom of the mould until it is filled to the top.

After a roller is made it is not ready for use until it is seasoned; this is to expose it to the air long enough to give it a certain toughness to withstand the pull and strain it will undergo in operation on the press. Upon the care and good judgment in seasoning a roller will depend its working qualities and its life, and only experience, coupled with close observation, will teach a person how to properly season a roller. The time required to season a new roller may be from one day to two weeks; it depends on the weather or the condition of the atmosphere around the roller. Seasoning will occur quicker in dry weather than damp weather, and quicker in winter than in summer. The degree of seasoning required often depends on the kind of work for which the roller is used; stiff inks will need tougher rollers than may be used for soft inks; slow presses may safely have softer rollers than those running at high speed. After rollers are properly seasoned, the seasoning should not be pro-

longed; it is then well to put them into use, and if not in use to cover them with soft ink or ink mixed with oil, and to keep them covered this way as much as possible, especially if they stay in a warm room. This seasoning and preserving of inking rollers is one of the most important problems of the pressroom. Neglect to care for them promptly may mean speedy ruin of the best rollers. Ink should not be left to dry hard on them, especially if they are new, or nearly so; to clean off ink in this condition will injure the face, either by roughening it with the hard rubbing required, or because of the strong washing fluid needed to loosen the ink. A good practice is to let soft, slow-drying ink stay on the rollers over night; or if the ink is stiff and will probably dry hard before the rollers are used again, to pour some common machine oil on them and run the press for a few revolutions, then let this ink and oil stay on till the rollers are used again. When quick-drying or colored ink is used, common oil may not prevent it from drying hard, especially over Sunday; in this case, it is better to wash the ink off clean and then cover the rollers with oil, or set them in a box or closet where they will keep cool and slightly moist. A shallow pan of water in the bottom of a roller box is often used to preserve extra rollers that are not in regular service.

A good time to wash rollers is just before they are to be used or before putting fresh ink on. Cleaning should be done carefully and thoroughly each time, and no specks of old ink allowed to remain to adhere just because they do not come off as readily as the softer ink. Specks left after careless washing, and allowed to remain for a day or two under fresh ink, will soon adhere so strongly to the composition that they cannot be cleaned off without taking a spot out of the surface of the roller, and so ruin it. Rollers that are used for colored inks require especial care to keep their surfaces from cuts, cracks, and pinholes, because in these places old ink will lodge and cannot be thoroughly cleaned out, but will remain to work out later into the next color that is used. For light colors and tints of ink, rollers with perfect surfaces are imperative.

Roller Composition—The substance of which printers' rollers are made; glue, sugar, glycerin, etc., melted together; when cool it makes a stiff, jelly-like mass.

Roller Mould— A long metal tube, used for casting rollers; of steel or brass tubing.

Roller Stock—The core of a roller, on which the composition is cast.

Rolling Up — To spread ink on a form or engraving, especially with a hand roller, as for a proof, etc.

Ready Print—See *Patent Outside.*

Register Rack—The heavy metal strip on the side of the bed of a cylinder press, having teeth geared to fit the cog-wheel on the end of the cylinder; it serves to keep the motion of the bed and cylinder in unison, or in register.

Register Hooks—Small clamps or catches inserted in the modern steel bases upon which electros are mounted for printing. The hooks hold the bevelled edges of the plate. The hooks are moved back and forth very precisely by means of screws, and the plate can thus be quickly registered into the exact position desired.

Removable Tympan—A recent invention. It consists of a steel frame which fits snugly on the sides of the platen of a job press. This frame holds the top-sheet and other make-ready sheets which lay on the iron platen, and it can be taken off or replaced intact, in exact position. Its advantage is that, by having two or more of the frames for a press, much idle time of the press may be saved. By putting the form on the press and taking an impression on this tympan, both form and tympan are then taken off for finishing the make-ready; if it is necessary to lift off a job before the run is finished, the form and tympan, with its make-ready, are removed, and another form with another tympan put in place,

and on its completion the first form and its tympan replaced in a short time. In an office with limited press facilities and on rush work of ordinary grades, the theory of a removable tympan seems of unquestioned advantage.

Rolling Press — The style of press used for copperplate and steelplate printing; the plate is rolled under a ᗡ-shaped surface to make the impression. Sometimes called a D-roller press.

Roller Carriage—The framework or apparatus on job presses, with hooks, springs, etc., which carry the form rollers back and forth over the form.

Roller Wheels — The small collars on the ends of form rollers on job presses, etc.

Roman Notation—The use of letters, instead of the ordinary Arabic figures, to express numbers, as I, II, III, IV, V, etc. The letters used are I (representing one), V (five), X (ten), L (fifty), C (one hundred), D (five hundred), M (one thousand). Units of a higher order stand on the left of one of the lower order; when a letter of lower order stands before one of a higher order, its value is subtracted; thus, IV reads four, IX nine, XL forty, XC ninety. This system of notation should be clearly understood by every compositor, as its use is common in many kinds of work.

Roman Type — The common form of letter face, such as is used for the text of this book; it is the kind of letter preferred for books and newspapers by English-speaking people and by the Latin races. Roman letter is distinguished from italic, with which it is often mated; from Greek, with which it has many characters in common; and from black letter or Old English, as well as from script or handwriting, etc. The first printing from type was not done with the Roman letters, but from what is known as black letter, an imitation of the hand work of the manuscript makers and scribes at the time of the invention of type. Roman letters were evolved later; the capitals being copied from old Latin lapidary letters, or those cut in stone, and the small letters (lower-case) first made in type about 1465, near Rome in Italy. These early letters were later greatly improved in symmetry and used as a body letter for books by Nicholas Jenson at Venice, about 1472, and since then the forms of Roman types have been based, with numerous variations and modifications, upon these early characters. See *Majuscule*, *Modern Roman*, *Oldstyle*.

Root Sign —The radical sign √ used in mathematical work. See *Mathematical Signs*. The same sign is often used typographically as a check-mark to verify or call attention to certain items in a list.

Rosette—An ornament or form having some resemblance to a rose, from the center of which several petal-like parts radiate.

Rotary Press—That type of machine which has the printing surface, as well the impression surface, on a cylinder, the two cylinders moving in unison while the sheet of paper passes between them to receive the impression.

Rounce—The handle which moves in and out the bed of the old style hand press.

Roughing—Treating smooth finished paper, either before or after printing, to a process which roughens the surface or destroys the shiny glaze. See *Pebble Finish*.

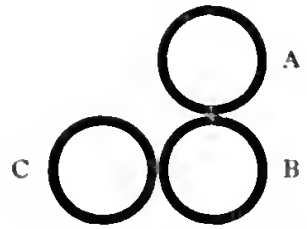
Rough Proof—A hurried proof, taken without special care, as with a planer, or on galley press, hand press, etc.

Routing—To cut out deeper the blank places in a printing plate, with a routing machine or tool.

Royal—A size of flat writing paper 18 x 24 inches.

Riding Roller, Riding Changer, or Rider—An extra roller attached to a press in such a manner that it rests upon and revolves with a form roller. It is usually of steel and has a slight vibrating or zig-zag motion endways. Its purpose is to give additional ink distribution on the form.

Rubber Offset Press—The offset press is a modern development of a method of printing that has been known for some time. Although the theory of the method is very simple, its commercial application has but recently been developed, chiefly because of the difficulty attendant upon obtaining a practicable method of preparing the offset surface. The original drawing is transferred lithographically to a thin aluminum or zinc plate which is attached to the surface of the cylinder A. The ink impression on this plate is offset at each revolution on to a hard rubber blanket attached to cylinder B. As the sheet of paper is



THEORY OF THE OFFSET PRESS

fed around cylinder C the ink impression is again offset from the rubber blanket to the paper sheet. It will be seen that the paper itself never touches the metal plate; in this way there is less liability, when printing halftones, of the plate filling up.

Rubber Type—Cast with a vulcanized rubber face mounted on metal body. This kind of type is not used in ordinary typographic printing, but belongs to the rubber stamp class of work. Rubber-face type is much

shorter than ordinary metal type, usually about one-half inch high, and when set in a small pallet is used for stamping by hand.

Rubber Stamps—Used for stamping by hand, for a great variety of purposes. These are moulded in vulcanized india rubber and mounted for use in many ways. In making rubber stamps, the copy is first set in metal type and a form prepared as for stereotype moulding; an impression is then made in a plastic substance, and on this mould a piece of sheet rubber is placed and both are then subjected to heavy pressure and strong heat (300 degrees or thereabouts) until the rubber has formed in shape in the mould. When cool, the rubber and mould are separated, and the moulded rubber mounted on handles or otherwise for use.

Rubric—That exceptional part of a book or manuscript which appears in red ink — a line, word, or initial. Originally one of the directions or rules printed in devotional or liturgical books directing the place or mode of observance, as in a prayer book, missal, breviary. To mark, distinguish, or illuminate with red. (From Latin *rubrica*, a red earth, or chalk, from which the color was originally made.)

Rubricator—One who puts in red or otherwise colors initial letters and other embellishments in books, manuscripts, etc.

Rubricated—Having lines or spots of red.

Ruby—The name in England for the size of type called agate in America.

Rule—Thin strips (of brass, usually) type-high and varying in thickness from 1-point to 24-point, for printing straight lines, etc. See *Brass Rule*. Hair-line rule _____, a rule 1-point or thicker, with a fine-line face; dotted line .....; parallel rule ═══, two lines of equal thickness made on one body; double rule ═══, two lines of unequal thickness on one body. Rule faces are made in a great variety of designs.

Rule Cutter—A small hand machine, used in composing rooms, for cutting brass rule, etc. The common style is a combination rule-and-lead cutter. See *Lead Cutter*.

Rule Work—Type composition in which brass rules are largely used, such as column matter, statistical tables, etc. Work of this kind, especially if set in small type in large forms, calls for great skill and care in justifying, in order that the form may lock up square and solid.

Ruling Machine—For ruling blank paper, such as account books, statements, bill-heads, etc. This machine is not usually part of a printing office equipment, but belongs to a blank-book bindery or paper house. Paper ruling is a specialized trade.

Ruled Paper — Blank books, writing paper, office blanks, etc., ruled with horizontal or with both horizontal and perpendicular lines as guides for writing, or for division into columns, etc. This ruling is done on special machines in which the flat sheets are carried along a framework by means of tapes or threads; as the sheets move under a set of pens arranged in the required positions the paper receives the ruling. Many kinds of ruled paper, like statements, billheads, account books, are made in more or less uniform styles, and are kept in stock by paper dealers and stationers, while an immense quantity of specially ruled paper is constantly being made for printers who make a specialty of stationery and blank-book work. The following are some standard sizes that are commonly kept in stock by paper houses:

Letterheads .... $8\frac{1}{2} \times 11$ = $\frac{1}{4}$ of 17×22 folio

Packet note..... $6 \times 9\frac{1}{2}$ = $\frac{1}{8}$ of 19×24 medium

Billheads .....
- 6's wide $8\frac{1}{2} \times 4\frac{2}{3}$ = $\frac{1}{6}$ of 14×17
- 4's " $8\frac{1}{2} \times 7$ = $\frac{1}{4}$ of 14×17
- 3's " $8\frac{1}{2} \times 9\frac{1}{3}$ = $\frac{1}{6}$ of 17×28
- 2's " $8\frac{1}{2} \times 14$ = $\frac{1}{2}$ of 14×17

Statements....
- $5\frac{1}{2} \times 8\frac{1}{2}$ = $\frac{1}{8}$ of 17×22
- $5\frac{1}{2} \times 11$ = $\frac{1}{6}$ of 17×22
- $5\frac{1}{2} \times 5\frac{2}{3}$ = $\frac{1}{12}$ of 17×22

Runs on Sorts — When copy calls for more than the usual number of any particular characters in the font. See *Sorts*.

Ruggles Press—A series of presses in various sizes and patterns, designed by S. P. Ruggles of Boston during the middle of the last century. He was one of the most successful inventors of job presses, but his machines have long been superseded. He made the first American card press about 1836.

Run-'rounds—Type matter justified to fit close around small engravings, special designs, and similar places.

Run In—In composing and proof reading, to put phrases or sentences into one paragraph; usually indicated ⌣ in this manner; to set matter without paragraphing. Run on, to continue matter in one paragraph.

Runners—Figures or letters placed down the side of a page to make ready reference to any particular line, as in school editions of classics, law briefs, etc.

Running Head, or Title—The title of the book or subject placed at the top of each page.

Run Out and Indent—To begin the first line of a paragraph flush and indent succeeding lines; to make hanging indention.

Saddle-stitch—To bind a pamphlet by sewing or wiring it through the middle, when the sheets are folded into each other quirewise. When the folded sheets or sections of a pamphlet are placed side by side, they are side-stitched.

Safety Paper—Used for checks, coupons, and similar purposes. Safety paper is made in various ways; that used by government departments for currency, stamps, etc., being manufactured by special processes. For many minor purposes it is made by printing a very light tint over the entire surface. The tint block may be a grained or lined surface, or it may have some distinctive design or lettering in repetition, so as to form a background for subsequent printing or writing. The purpose is to make a surface upon which erasures or changes cannot be made without detection.

Sans Serif—The style of type face in America called gothic is in England called sans serif (that is, without serif). It is distinguished by the absence of serifs or ticks on the ends of strokes and by its uniform thickness of line. See *Gothic*.

Savings Galley—A galley for holding type which has been once used, but which is saved for use again, in whole or in part. It may be a regular galley kept in convenient place, or a special small wooden galley to be placed on the cap. case.

Scale—A schedule of prices establishing charges for certain kinds of work, such as wages, composition by hand or machine, press work, engraving, electrotyping, etc. A scale usually fixes minimum charges, and differing prices are often based on quantity, quality, time of payment, etc.

Scale-boards — Dampened strips of spongy cardboard put between ends of lines and side-sticks, to tighten lines imperfectly justified. Originally scale-boards were thin strips of sheet iron and were used for leading lines of type; later they were used between the type pages and the chase for securing register, etc. The term and the material are not now in use, as accurately made furniture, reglets, and slugs, with more careful workmanship, make scale-boards unnecessary except in very botchy composition. Another form of the word was *scabbard.*

Scare Head — An extra large, sensational head-line, as in a newspaper.

Scissors, Shears — "In trade usage, all such instruments less than six inches in length are termed scissors, while all exceeding that length are shears."

Score—To crease cards or thick paper slightly, so that they can be folded exactly at certain points. This may be done by locking up the scoring rules in the required position in a job press chase, then taking off the ink rollers, setting gauges and feeding the sheets through in the same manner as for printing. See *Perforating Rule.* Scoring is also done on a special machine, which has a small wheel revolving slightly above an iron shelf or table; between this wheel and table the sheets pass, receiving a slight mark at the place where the fold is desired.

Scoring Rule—Brass or steel rules for creasing folders, covers, etc., on a job press.

Scotch Roman — A style of type face introduced a few years ago by a firm of Scotch type founders. It is a modern roman with slightly thickened strokes and rounded serifs, giving a general effect like old-style. It should not be confused with Scotch-cut modern roman, which is a much older face based on a French style of roman known as Bodoni. Scotch roman is made in this country by the American Type Founders Co. under the name of "Wayside" series.

Scotch Roman (Wayside)

ABCDEFGHIJKLMNOPQRST
abcdefghijklmnopqrstuvwxyz
1234567890

Scotch-cut Modern Roman

ABCDEFGHIJKLMNOPQRSTU
abcdefghijklmnopqrstuvwxyz
1234567890

Scratch Comma—An old name for the sign / commonly used to separate shillings and pence (English money), between fractions, and in similar places, ⅞ ¾.

Scratched Figures — Another name for cancelled figures, such as are used in arithmetic work, etc., 6.

Screamer — An exclamation-point put at the end of a large head-line.

Screw Chase—This style of chase is chiefly used in newspaper work. Instead of lock-up with quoins, screw bolts are fitted into two sides of the chase and the bolts operated by a wrench. See *Chase.*

Screw Press—A machine for imparting pressure by turning a large screw or screws. The early hand press was of this style.

Screw Quoin—A small iron quoin whose side pieces spread or contract by means of a screw bolt which is operated by a small wrench. Not much used, except in amateur printing outfits.

Screw Stick—A compositor's stick in which the knee is held to the back plate by means of a screw. In the old-style screw stick a short screw, requiring a screw-driver to operate, goes through the back plate and into the knee. The common job stick, in which the knee is held in place by a thumb-screw, is called the Yankee stick. See *Composing Stick.*

Script—A general name for that class of types designed to imitate handwriting. Script type is expensive to make; its long kerned faces, with delicate hair lines, renders it fragile. Its use is now very limited except on fine card and society work. Many printing houses do not have script type, but turn over work of this kind to the copper-plate engraver, or make a relief plate by photographing a pen drawing.

Second Mark—The double tick ″ used to indicate geographical and chronological seconds, etc. See *Minute Mark.*

Section—A sheet of book pages folded ready for sewing; it is usually identical with signature; but often two or more signatures, set one into the other, make a section.

Sectional Block—For mounting electrotypes or other printing plates. It consists of a number of small, hollow steel and brass sections made on a unit system of sizes. A number of these sections may be combined to form any size page desired, or to fill an entire chase. The brass sections are fitted with small hooks or catches operated laterally by screws. When the electro, with beveled edges, is placed on the block, the hooks are put into position and, by means of a hand ratchet, are screwed up to hold the plate firmly. See *Patent Block.*

Sectional Type—A style of type in which each letter was made in two parts, the upper half being separate from the lower part. By setting lines of smaller type between the upper and lower parts, the effect produced is of a narrow panel lying across a line of large type. A typographic arrangement now rare.

Section Mark—The old-style reference sign §, usually kept in one of the top boxes of the cap. case. See *Reference Marks.*

Semicolon [;] — See *Punctuation Marks.*

Separatrix — The diagonal stroke used, in correcting proofs, to call attention to the mark in the margin, and to separate the marks when there are several corrections in the same line, etc. Also, a dot placed before a decimal fraction, to separate it from the whole number to which it belongs; the decimal point.

Series—When a style of type is made in two or more uniformly graded sizes it is said to be a series of that face. Most popular type faces are now made in series, ranging in sizes from 6-point up to 72-point, and even larger. See *Sizes of Type.*

Serif—The short cross-line or tick at the ends of the stroke in roman letters. See *Type.*

Set—To pick up types and arrange them in form for printing. Also, the width of a type is its set; the size of a type is its depth up and down, its body-size. Thus, a 10-point en-quad is 10-point body and 5-point set.

Set Close—To thin space and omit leads. Set open, to wide space and open out well with leads or slugs.

Set-off — See *Off-set.*

Set Out—When any letter in a case has been exhausted so that no more of the copy can be composed, it is set out, even if many boxes still have type. See *Empty Case.*

Set Solid—To set lines of type close together, without leads or other material.

Setting Rule—A composing rule.

Setting the Stick—Adjusting the knee of a composing stick to the required measure. To set a stick accurately, use 12-point (or pica) lower-case letter m's, of any convenient font, putting the letters in sideways in this manner:

Adjust the knee so that the line will stand without falling, but not so tight that it cannot be readily lifted out. If the stick has a thumb-screw clamp to hold the knee, try the screw occasionally to see that it does not work loose after a number of lines have been justified, thus making the last line longer than the first.

Shank—The metal body upon which the letter is cast.

Shaved Leads—Those that are made by a method of drawing through a mould which shaves them to exact and uniform thickness the entire length; in distinction from leads made by the old method of casting in common moulds, which is a slower operation and produced leads which were more or less imperfect.

Sheet the Roller—To turn a roller over a sheet of paper (it should be hard, or sized) for the purpose of taking off surplus ink.

Sheetwise—The pages of a sheet imposed in two forms, the forms being printed separately, one on each side of the sheet. See *Half Sheet, Work-and-turn.*

Shilling Mark — The short diagonal stroke frequently placed after a number expressing shillings in English money. It is used thus, 6/, signifying 6 shillings; or placed between two numbers, 6/4, signifying 6 shillings and 4 pence, or 6*s.* 4*d.*

Shoe—One or more sheets of strong paper, upon which a page of type is laid when it is desired to be put aside. Pieces of stiff cardboard, cut a little larger than the type page, are sometimes used for shoes. Old shoe is the term sometimes applied to the hell-box, or receptacle for broken type, etc.

Shoofly — On a cylinder press, the frame of short steel fingers between the grippers in front of the feed-board; it supports the sheet as it is drawn around by the grippers, and when the sheet comes around, after printing, rises slightly to run the sheet on to the front delivery fly.

Shooting-stick — An implement used to drive up wooden quoins in locking forms. Iron quoins are made to tighten the form with a wrench or key, without the use of a shooting-stick and mallet. See *Quoins.*

Short Accent—The upturned curve over the vowels, ă, ĕ, ŏ, etc.

Short And—The sign &; sometimes called the *round and;* formerly called ampersand.

Short Count—When the number of copies of a piece of work, or the sheets of paper, are not sufficient to make the quantity wanted.

Short Cross—The short bar of a large chase; the bar dividing a chase lengthwise is the long cross.

Short Page—When the type matter does not fill it to the same length as its mates, and it has to be filled out with blank material.

Short Take—When copy is divided among several compositors, each has only a few lines to set, or a short take. See *Take.*

Short Twelves—A plan of imposing a sheet of 12mo, in which the pages are laid down in three rows of four. See *Long Twelves.*

Shoulder—The top of the type body not covered by the letter. More specifically, the space above and below the letter is the shoulder; at the side the space is called side-bearing.

Shoulder-notes—Side-notes on book pages, when they are at the top of the page, are sometimes called shoulder-notes.

Show Bill—A large sheet or poster, printed with bright colors, pictures, etc., to post on billboards. Show card, a large placard to post in public view.

Side-bearing—The shoulder on the side of a letter or other character; it gives the space between the letters of a word. Also, on cylinder and job presses, the type-high ledge on each side of the bed; on the former the side-bearings support and steady the cylinder during the impression, and on the latter, they support the roller-ends while inking the form.

Side-head—In book work, a side-head is usually set in the first line of the paragraph. In catalogues, advertising, etc., side-heads are often put in lines by themselves, either at the side of the matter to which they refer, or at the commencement of a line immediately above.

Side-note—In book and pamphlet work, side-notes are in the margin outside of the type page, and are usually set in narrow measure in type several sizes smaller than the text of the page.

Side Sorts—The infrequently used characters of a font, such as j, q, x, etc., kept in the small boxes at the side of the case.

Side Sticks, Foot Sticks—Strips of wood or metal furniture placed at the side and foot of a page in a chase; against these the quoins are placed for locking up. When old style wooden quoins are used, the side sticks are narrow at one end and wide at the other, to form a wedge into which the quoins are driven with a shooting-stick.

Side-stitch.—To bind a pamphlet by wiring or sewing the sheets together sideways. See *Saddle-stitch*.

Signature — In book work, a letter or figure at the bottom of the first page of a form, to direct the binder in putting the printed sheets in order in the volume. Signatures guide the binder in folding, insetting, and collating the sheets. They are also of use to the compositor and pressman in identifying the forms and arranging them in proper position on the press. The text usually commences with signature B or 2, A or 1 being reserved for the preliminary sheet, where, however, it is not inserted. The general rule in this country is to use common figures for numbering, although the older practice was to use letters in alphabetical order. This marking of signatures on the first page has been largely superseded by another method. This is to place a mark in the gutter margin between the first and last pages of the sheet. As these two pages are side by side, any mark would show on the back of the folded signature. The first signature has the mark well toward the top, the next signature has it a little further down, and the others still further down at regular intervals. When the signatures for a complete book are

Modern method of marking signatures, showing the marks on back of signatures when folded and gathered.

gathered, the back will show a series of these marks in regular order, as illustrated on the preceding page. A missing signature will be noted by the absence of its mark in the sequence, and a transposition or doubling of signatures will show an irregularity in the sequence of marks.

Signature Cut — An engraved fac-simile of an autograph, used for printing a person's name.

Signature Line — The line of quads at the bottom of the first page of a signature, in which the number or letter is placed. See *Foot-line*.

Signature Page — The first page of a folded sheet or signature. A large form of small pages often contains two or more signatures, which are to be cut apart after printing; in this case the first page of each part, having the signature letter or number, is termed the signature page.

Signature Press — Used in book binderies, for pressing together with great force the folded signatures, in order to make the leaves flat and the book as compact and solid as possible.

Sign — A mark used as an abbreviation for a known meaning; a figure, letter, or other character used technically, instead of the word, according to prescribed usage. See *Commercial Signs*, *Mathematical Signs*, *Religious Signs*, *Proof Reader's Marks*, etc.

S. & S. C.— Referring to paper, means sized and supercalendered. *S. & C.*, sized and calendered.

Silhouette — A portrait, profile, or outline of any object represented in black.

Silver Bronze — A fine white metallic powder dusted on an impression made with white size, for silver printing. See *Bronzing*.

Simplex Type-Setter — A machine for setting and distributing type, the composing being done by operating a keyboard similar to a typewriter. The machine consists of an upright cylinder having vertical grooves on its surface the entire length. The type used is regular foundry-cast, but each character of the font is nicked different from all other characters and fits a particular groove in the upright cylinder. This cylinder is in two sections, the lower part being stationary, while the upper part, which is the distributing mechanism, revolves intermittingly. In the grooves of this upper part are inserted lines of dead matter in a vertical position. The width of the grooves is made to coincide with the size of type used, and they are a little less in depth than the height of type. The type rests on its side, the face projecting slightly beyond the cylinder. As the upper cylinder moves around step by step it presents the bottom type in each line over a groove in the lower stationary cylinder; the type,

however, will drop only into the groove which has its shape or "teeth" arranged to match the nicks of the type assigned to it. In this way each letter is delivered to its special groove. The composing is done by releasing the types in required order at the bottom of the grooves. This is controlled by the keyboard, and as each type drops it is carried on a swiftly revolving disk around to a narrow channel in front of the operator. This line is continuous, and as it advances to the end of the channel it is divided by hand into short lines and justified in a stationary "stick" in the same manner as ordinary hand composition. This machine was originally known as the Thorne type-setting machine, invented by Joseph Thorne and patented in 1880. It is the most successful type-setting machine yet made, and there are many of them in use throughout the country.

Sinkage of the Chapter Head—To put a blank space, like a line of quotation furniture, at the top of the first page of a chapter.

Six-to-Pica — Said of leads, brass rule, etc., before the adoption of the point system. The thickness of leads and rules was indicated by the proportion their size bore to the pica: six-to-pica is approximately two-point; twelve-to-pica, one-point.

Sixteen-mo — A sheet folded to make sixteen leaves; 16mo or 16's. See *Octavo.*

Size — A glutinous preparation, made of animal or vegetable fats, used to give stiffness to paper and to prevent writing ink from spreading on it. Size may be mixed in the pulp in the vat, or the paper may be coated by passing through a bath of size, when it is said to be tub-sized. Writing papers are fully sized; printing papers are lightly sized or devoid of all size. Also, a sticky, varnish-like substance, used as a printing ink when the sheets are to be bronzed. Size of this kind is often colored to correspond to the color of the metallic powder to be used, as white size for silver powder, yellow size for gold powder, etc.

Sizes of Envelopes — A few standard sizes of envelopes are here listed:

Commercial . . .	No. 4	— size	$2\frac{7}{8} \times 5\frac{1}{4}$ inches
	No. 5	— "	$3\frac{1}{16} \times 5\frac{1}{2}$ inches
	No. 6	— "	$3\frac{3}{8} \times 6$ inches
	No. $6\frac{1}{4}$	— "	$3\frac{1}{2} \times 6$ inches
	No. $6\frac{3}{4}$	— "	$3\frac{5}{8} \times 6\frac{1}{2}$ inches
	No. 7	— "	$3\frac{3}{4} \times 6\frac{3}{4}$ inches
	No. 9	— "	$3\frac{7}{8} \times 8\frac{7}{8}$ inches
	No. 10	— "	$4\frac{1}{8} \times 9\frac{1}{2}$ inches
	No. 11	— "	$4\frac{1}{2} \times 10\frac{3}{8}$ inches
	No. 12	— "	$4\frac{3}{4} \times 11$ inches
	No. 14	— "	$5 \times 11\frac{1}{2}$ inches
Baronial	No. 4	— "	$3\frac{5}{8} \times 4\frac{11}{16}$ inches
	No. 5	— "	$4\frac{1}{8} \times 5\frac{1}{8}$ inches
	No. $5\frac{1}{2}$	— "	$4\frac{3}{8} \times 5\frac{5}{8}$ inches
Coin (open end)	No. 3	— "	$2\frac{1}{2} \times 4\frac{1}{4}$ inches
	No. 5	— "	$2\frac{7}{8} \times 5\frac{1}{4}$ inches
	No. $5\frac{1}{2}$	— "	$3\frac{1}{8} \times 5\frac{1}{2}$ inches
Pay (open side)	No. 2	— "	$2\frac{1}{2} \times 4\frac{1}{4}$ inches

Sizes of Paper — See *Paper Sizes*, *Ruled Paper*.

Sizes of Type—Printing type has, first, a name indicating its size, and second, one denoting the style of its face. For instance, the type used for the text of this book is 10-point (its size) Franklin Old-style No. 79 (the foundry name of its face). Formerly there was no uniform standard of type sizes, although most foundries made types in a certain relative proportions, and these sizes were known by arbitrary names. But, as each foundry had a standard of its own, the printer who bought from different founders had no assurance that the bodies of one founder would exactly match that of the same name from another.

The sizes of types now cast by American type founders are graduated on a uniform scale known as the Point system. The unit of the system is a division of space called a point (about $\frac{1}{72}$ of an inch), and all type-bodies are multiples of and are measured by it. The multitude of type faces made by the foundries nowadays makes it necessary to use several words to name a specific type, but each *size* is described by its number of points.

There are some printing-houses where the old sizes are still in use and many of the old names are in vogue — even applied to types of the point system,— and the apprentice should familiarize himself with

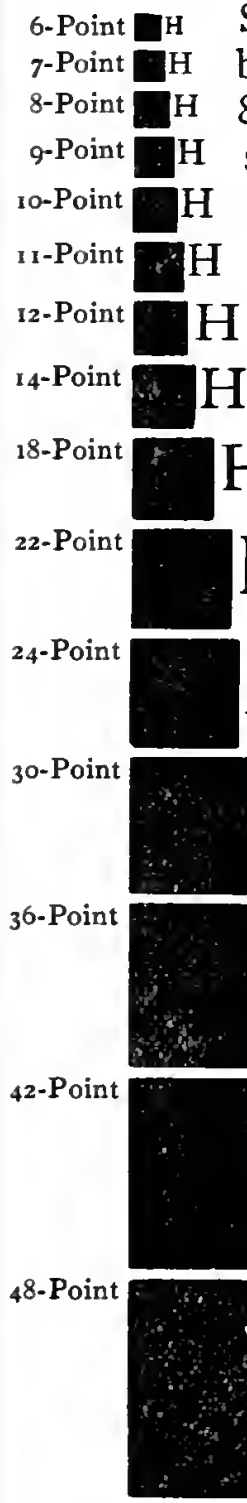
these older names in connection with their corresponding sizes of the point system.

3-Point	Excelsior
4-Point	Brilliant
4½-Point	Diamond
5-Point	Pearl
5½-Point	Agate
6-Point	Nonpareil
7-Point	Minion
8-Point	Brevier
9-Point	Bourgeois
10-Point	Long primer
11-Point	Small pica
12-Point	Pica
14-Point	English
16-Point	Columbian
18-Point	Great primer / Three-line nonpareil
20-Point	Paragon
22-Point	Two-line small pica
24-Point	Two-line pica
28-Point	Two-line english
32-Point	Two-line columbian
36-Point	Two-line great primer
40-Point	Two-line paragon
44-Point	Meridian
48-Point	Canon, Four-line pica

The smallest size in general use is 5-point (pearl), and sometimes 4½-point (diamond) is necessary, but except for special uses, such as miniature editions of books, cut-in notes, piece-fractions, small borders, and special characters, and an occasional word or line that is required to be put into the smallest possible compass, sizes below 5-point are not practicable for any extended use. Agate (5½-point), nonpa-

riel (6-point), minion (7-point), and brevier (8-point) are sizes used mostly in newspapers and magazines for the small type in advertisements. Agate (14 lines to an inch) is the common standard of measurement for newspaper and magazine advertising space, the price being usually based upon the number of agate lines. Ordinary roman types for books and periodicals are made only in the smaller sizes of the list. There are numberless varieties of these faces, some of which require the eye of an expert to distinguish one from another. Some of them are made in a few sizes only, while others are made in more or less complete series from 5-point to 48-point. The irregular sizes of 5½-point, 7-point, 9-point, and 11-point are mostly roman faces, with their companion italics, and a few bolder styles for side-headings and other display in combination with roman of the same body.

Type-founders now make most new styles of type in graded series from 6-point to 72-point, and in some cases even larger. Types adapted to many kinds of work are made in nearly all regular sizes; those having a more limited use are made in fewer sizes; there being, for instance, less need for the smaller sizes of very heavy faces, while those designed for small and dainty work are made only in the smaller sizes of the list.



Sizes of job types are graduated by two points up to 14-point (6, 8, 10, 12, 14), with an occasional series having an 11-point or a 15-point size; then 18-point and larger by multiples of 6-point up to 60-point (18, 24, 30, 36, 42, 48, 54, 60). Larger sizes are usually 72-point, 84-point (rare), and 96-point, the largest metal types cast in a mould being 120-point and 144-point. Besides the foregoing there are some intermediate sizes (16, 20, 22, 28, 30, 40-point), which, though not used for type of recent design, will be found in some composing rooms. These sizes are mostly old type faces, scripts, and black-letter, originally cast on the old bodies and later, after

NOTE. Each square of black shows one em of the size stated, and also the depth of the body upon which the letter is made. The space below the H is required for letters like y, p, g, etc.

the introduction of the point system, made on bodies of the new system which approached nearest to their original sizes. Bastard types are those with faces larger or smaller than is commonly made on the body, as the face of 7-point on 6-point body, giving the effect of compactness; or an 8-point face on a 9-point body, which gives a lighter appearance as if opened with thin leads. Because of this irregularity in the faces of types it is often difficult, even for an expert, to know the body-size of a type by examining a printed sheet.

Skeleton Chase—A plain iron frame of large size, without cross bars or dovetailed slots for bars.

Skeleton Form — A form made up chiefly of large blank spaces, with relatively little printing surfaces widely separated, such as might be used for a blank-book page, or a form for printing spots of a second color on a job.

Skeleton Letter — A type face in which the lines are very thin and the shapes of letters greatly condensed or unusually extended.

SKELETON LETTERS

Slice — A thick, wide metal knife for handling ink, etc.

Slice Galley — An old style wooden galley, in two parts; used for large pages. The upper part, or slice, on which the type was placed, fitted into a lower tray with ledges on three sides. The slice had a ledge which closed the fourth side when the galley was put together. When the page was tied up securely, the shingle-shaped slice was withdrawn, and from it the page was pushed on to the imposing stone. This style of galley has now gone out of use.

Slide — Another name for the movable knee of a composing stick.

Slip Proof — A long, narrow proof taken from the galley before the type is made up into pages or columns.

Slip-sheet — An extra sheet of waste paper placed between freshly-printed sheets as they are printed, to prevent set-off of ink. See *Interleave.*

Slitter — A mechanism for cutting sheets of paper lengthways as they pass through a printing press or other machine. It consists, usually, of a small disk with a sharp cutting edge which revolves swiftly close beside another steel cutting edge. The edge of the sheet is presented at the proper point and as it passes along the revolving wheel slits the sheet.

Sloping Fractions —Those made with the diagonal line, in distinction from those with the short horizontal lines. See *Fractions.*

Slug—A thick lead. In newspaper and other piece-work it has a word or figure on it to denote the compositor to whom the matter following belongs.

Slur—A blurred impression. Slurring is due to a disturbance of the sheet when the impression of the form is made. On a hand press, when the sheet is laid on the form by hand, any wavering may cause the sheet to move sideways; or it may be disturbed when putting on a sheet or card for extra impression, or by carelessly slamming down the tympan before the bed is run in under the platen. If the bed of the press is very smooth and slippery, as it often is when electrotype forms covered with black lead are handled, a quick motion of the bed, after the sheet and tympan are down, may cause the form to move slightly before it is in place for the impression. On a job press, a slur may be caused by improper adjustment of the platen; it may not be level on its bolts, or the impression may strike hard on one corner or one end. A loose, baggy tympan, with too much packing under it, may keep the sheet so far up from its impressional level that the form will touch it first and push it down some distance before the impression is made; or the grippers may not hold the sheet smooth and firm. On a cylinder press, the gripper-fingers may not be fixed evenly and the sheet or some part

of it may slip as it is being drawn around for the impression; the cylinder and bed may not be adjusted to move together accurately; the bearers may not be the right height; the packing on the cylinder may be too little, or too much, and loose; or the bands which hold the sheet up to the cylinder may let the tail of the sheet down on the form before the impression occurs. Slurring may be due to a variety of causes, either defects in the press or in the adjustment of its parts. A form with large open spaces in it is more apt to slur than a solid, compact form. A solid form will, because of the more uniform distribution of pressure, usually leave an even impression on the sheet. A form with a single line or a rule standing alone will need to have the sheet held down smooth and firm against the impression surface, or tympan, and the proper pressure made with precision in order to leave a sharp, clean imprint; the least deflection or unnecessary force will leave a blurred or thickened result.

Small Pica —The old name for the type size now known as 11-point. See *Sizes of Type*.

Small Caps — Nearly all fonts of type intended for book work have, in addition to the usual capitals, an alphabet of small capitals. These are slightly larger than the small letters of the lower-case font, and are

often useful for side-headings, sub-heads, running titles, and in other places where some variation from the other alphabets is desirable. The quantity of small caps. in a complete font is comparatively small, and type founders do not include them in the font unless specially ordered. In some fonts the small caps. c, o, s, v, w, x, z, are so nearly like the lower-case letters that they are distinguished only by very close scrutiny of both side by side. Occasionally, small caps. are marked by an extra nick near the top of the type; why type founders do not so mark them in all cases and save the typographer much trouble, is a query often asked. In copy, a direction to use small caps. is to draw two lines under the word.

Soft Paper — That which has a soft surface and body, and little or no sizing, requiring relatively little pressure for printing; news and common book paper.

Softening Punch, or Hammer — A tool with a stippled face, used by pressmen to soften up or slightly roughen the edges of vignetted halftones that have been worn in printing.

Solace —A penalty imposed by old-time printers for violation of shop laws.

Solid Matter—Matter without leads between the lines; with few break-lines it is, in piece-work, *lean*.

Solids — In a printing surface, the smooth parts which print full color, as distinguished from parts that are stippled, grained, or otherwise made to print a gray color. The brightest or whitest portions of a picture are termed *high lights*.

Solid Pick — A letter, in type or electro, filled up with metal or other hard substance.

Sorts — The letters in the boxes of a case; "out of sorts," short of particular letters; "runs on sorts," when the copy calls for more than the usual number of any letters.

Sort Up —To add sorts or needed letters to a case of type.

Space —The thin metal blanks used to separate words in a line of type. Trade custom designates the thinnest blanks, up to one third of the em, as spaces, and those one half the em and wider as quads. The different thicknesses of spaces are named three-to-em (▮), four-to-em (▮), five-to-em (▮), hair space (|), according to their relation to the square, or em quad. To the beginner the difference between spaces and quads is often confusing, as a metal blank that is a three-to-em space of one size of type is exactly the same dimensions as a three-em quad of another size of type. Thus, a three-to-em space of an 18-point font is 6 × 18 points, which is identical with a three-em quad of a 6-point font. The difference between the two blanks is,

however, in the position of the nick; on the 6-point quad the nick is along the wide three-em side, while on the 18-point space it is across the narrow 6-point edge of the blank. When there is a shortage of quads of smaller size, spaces of a larger size may often be used to supply the deficiency; but, when the matter is distributed, these different spaces and quads should be put with their proper fonts and not scattered here and there throughout the cases in the room. See *High Spaces, Low Spaces, Quads.*

Space Barge — An English trade name for a small tray with six or more divisions, to hold an assortment of spaces; such as may be used for correcting on the stone or the press. A space barge may often be merely a piece of paper or card.

Space Dots — Periods cast higher than the usual line of the face. They are used between words set in roman capitals composed in classic style of tablet inscriptions, in titles, etc. For occasional use only, and not advisable where there are many words.

FOR · CLASSIC · LETTERING · IN
IMITATION · OF · INSCRIPTIONS

Space Rules—Small metal dashes cast on thin bodies, used in occasional small tables, algebra work, etc., to separate words or figures. Brass rules with light faces are now used with better results.

Space Out —To increase the spacing between words or lines, to make full length, or to cover specified area.

Spanish N—The letter ñ with a curved line (*tilde*) over it, representing the sound of *ny*, as cañon, pronounced *canyon*. Sometimes called curley n.

Specimen Book — A book or catalogue showing the productions of a type foundry, electro foundry, engraving shop, etc. It is now usually made in the latest and highest style of the art, and should be carefully studied by every apprentice, to increase his knowledge about materials and the manner in which they are used.

Specimen Page — A sample page; it may be of a proposed book, or to show the use of certain types, borders, etc. In all important work a specimen page is first set, in order to decide upon the style, size, and other details.

Split Fractions — Those cast in two or more pieces; same as piece fractions.

Spoilage — Paper spoiled or wasted in press-work.

Spring — When a form is locked in the chase and the type and furniture rise slightly from the imposing surface, it is said to spring. This is caused by furniture, cuts, or other material not being perfectly true on the sides, or by improper justification of the matter. It is also liable to occur

where there are wide spaces fitted with wood furniture and the lockup is too tight. Spring in the form means that it will not lay solidly on the bed of the press, and the form is not in a proper condition for printing. A form may be readily tested, when locked up, by gently pounding it with the side of the fist; a spring in any part will be detected by the difference in sound at the points where it is solid and where it springs. The usual remedy is to unlock and examine the form where the spring occurs; a long line, or rule, or slug, or an imperfect piece of furniture may be the cause; sometimes simply reversing a piece of furniture, straightening up lines that are off their feet, or tightening up the quoins in a different order may remedy the defect. Even when a form is in good condition, it may spring because it is locked too tightly. To try to overcome spring in a form by vigorous use of the planer and mallet is an unwise proceeding and usually results in trouble later. See *Rise*.

Squabble—Type matter twisted out of shape.

Square Twelves—A scheme of imposition in which the pages of one side of a 12mo are laid down in three rows of four pages each. See *Long Twelves*.

Stand—A frame on which type cases are placed; the lower part is usually fitted with a rack for additional cases.

Standing Galley—A frame with inclined top divided into galley-like divisions for holding type in pages or columns; the divisions are usually lined with zinc or brass and serve as stationary galleys. The lower part of the frame often has case racks, letter boards, drawers or boxes for sorts, etc.

Standing Matter — That which is kept from one printing to another, like advertising, notices, or other composed matter.

Standing Press — Used in book binderies. See *Hydraulic Press.*

Stamping Press – A small powerful apparatus for printing steel dies, official seals, and other work; general term for die press, seal press, etc.

Staple Binder — A small machine, operated by hand or treadle, for binding pamphlets, documents, etc., with wire staples.

Star [*] — The asterisk; the first in the list of old-style reference marks.

Statement—A blank form, with printed heading, used for presenting a statement of account between a business firm and its customers. It is a common form of job printing. See *Bill-head.*

Steam Printing — An obsolete phrase, which meant that the printing press was run by steam power — when this method was superseding hand-power. Later, we have had " electric printers."

Steel Die — A small block of polished steel, upon which letters or other characters are engraved in intaglio. It is employed for fine stationery and card work, and is more expensive than typographic or relief-plate printing. The design to be stamped is transferred to steel and engraved by hand. The etching process is used to a limited extent, but the die must be finished by hand. It is then fastened in the head of a stamping machine. Stiff ink is dabbed into the lines of the design and the face cleaned off. A counter die is built up of bristol board, and the impression forces the stock into the die and takes up the ink remaining in the lines, thus producing an embossed effect at the same time. This process must be repeated for every impression. The work may be done by hand or power, on a machine built expressly for the purpose. The ink used is ground in damar varnish, and very little, if any, other medium is used except japan dryer. The beauty of the finished work by this process is in the perfect register of printing and embossing, which is done simultaneously, and the high gloss which is made possible by the thick layer of ink that is mostly varnish. Imitation steel-die printing is sometimes done on common typographic job presses, by first printing the design flat; when the ink is dry, the form is run a second time with gloss varnish, and then an ordinary em-

bossing die put on the press for the final impression. All three impressions must be run in carefully exact register. This is successful for designs that contain little detail or are not too small. See *Embossing.*

Steel Electrotype — An electro upon the surface of which a thin film of steel has been deposited. Besides durability of face, it withstands the chemical action of certain colored inks, which cause trouble with ordinary electros. Steel facing is resorted to where large numbers are to be printed from photogravure plates. The first film is deposited by an electric battery over the whole of the plate, which it hardens and protects. This steel face in time begins to wear, through constant pressure and rubbing incidental to the process of printing, and the copper begins to show through it; when this happens the plate is placed in an acid bath and the steel film disappears; the plate itself being intact, may be restored for further work. A later improvement of great value is the nickel steel electro. This is a deposit of nickel steel, instead of copper, directly on a wax or lead mould, giving a more exact duplicate of the original than is obtained by the former method, which adds a film of nickel to the copper duplicate. See *Electrotype.*

Stem (of letter)—The main upright stroke of a letter.

Steel Engraving — A plate of polished steel on which the picture or design is engraved or etched in intaglio; in general practice the method of engraving and printing is like copperplate work, and the results similar. A picture made from a steel plate. See *Copperplate Engraving.*

Steel Furniture—A modern improvement on printer's wood and soft metal furniture; its great advantage being durability, rigidity, and usually lighter weight than the ordinary metal. Made in various styles, for which see dealers' catalogues; see also *Furniture.*

Stencil — A sheet of strong paper or thin metal in which a pattern of letters or other characters are cut through in such a manner as to give a general though often incomplete representation of the design. It is used by laying on a surface and brushing over with coloring matter. A pattern produced by a stencil.

Stereotype — A printing plate of metal, cast from a matrix held in a mould while melted stereotype metal is poured in. The matrix for a stereotype is made by taking an impression of the type page, form, engraving, or other surface, on a specially prepared thick paper. This special paper, called a flong, is made by pasting together several sheets of strong tissue and thick blotter-like paper with a prepared paste.

This sheet, while in a soft, pulpy state, is laid on the form, covered with a thick felt blanket, and the whole put into a strong press, heated by steam or hot air, and allowed to set and dry. A matrix may also be made by beating the flong on the form with a strong, flat brush. When the matrix is thoroughly dry it is trimmed and placed in the casting box. Stereotypes to be used on rotary presses are cast in curved shape, to fit the cylinder upon which they are to be clamped; so that the casting box must conform to the curve of the cylinder. Stereotypes are now chiefly used by daily newspapers. They are not so well adapted as electrotypes for book printing and general commercial work; the coarse quality of the stereo matrix and the soft metal do not compare with the fine wax moulding and tough copper face of electrotypes; but the short time in which stereotypes can be made, and their cheapness, make them well adapted for newspaper work.

Stereo — Abbreviation of stereotype.

Stereo Chase — Extra strong and thick, for locking up forms to be moulded for stereotyping; foundry chase, electro chase.

Stereo Flong — The soft prepared sheet of paper used to make a stereo matrix; when it has been moulded on the form and dried it becomes a matrix.

Stereo Metal—In distinction from type metal, stereo metal is softer, containing a larger percentage of lead, a small quantity of antimony, and little or no tin.

Stet—Written opposite a word in proof, to signify that it is wrongly marked out and shall remain.

Stick—A composing stick.

Sticker—A small, narrow gummed slip, usually printed, to paste on another sheet or object. Before the days of the Australian ballot in elections, many printers did a lively but brief business in printing stickers for candidates who wished to get their names on as many as possible of the ballot sheets in use on election day.

Stickful—An amount of composed type that would be set in a stick at one time; about two inches of the column.

Stiffener—A thick card inserted in a cover, envelope, or similar wrapper, to protect the package from injury by bending or breaking.

Stipple—A printing surface that consists of dots, instead of lines. The dots may be fine or coarse, to give effects of light and dark. Halftones are stipple engravings.

Stitcher—See *Wire Stitcher*.

Stock—Paper, cardboard, or other material upon which printing is done.

Stock Cut—An electro of an engraving, ornament, or other design kept in stock by dealers. It costs less than a special cut, as it is one of a number of duplicates. Type founders, electrotypers, and engraving houses supply a large line of these.

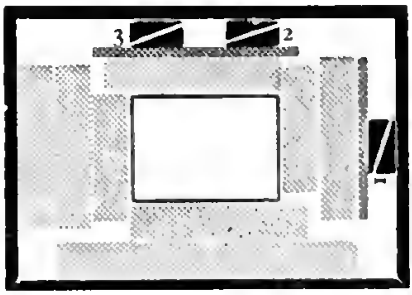
Stone — The imposing stone ; an iron imposing surface may be sometimes termed a stone.

Stone-hand—One who is chiefly employed in imposing and other work on the stone.

Stone Work — That which is done on the imposing stone or table, like making up large pages, imposing book forms, locking up, etc. Before placing a type form on the stone, it should be corrected, properly spaced and leaded, and securely tied up. The surface of the stone should be perfectly smooth and free from grit and dirt of every kind. Pass the hand over it to make sure that there is nothing to prevent every letter of the form being planed level. Also be sure that there is nothing on the bottom of the type. This is important, because, if there is anything under a letter or word to make it stick up higher than its mates, it will be battered in the planing down ; if the form goes on the press with the letter still high, the hard impression will batter it still further. Next, place the chase around the form, and put in the furniture. If it is a single page, lay

it so that the top line is at your left hand; then place four pieces of furniture around it like this:

Next, fill in with furniture, leaving space enough for quoins at the further side of the form and at the foot of the page. Keep the type form as nearly as possible in the middle of the chase. If there is any variation, let the page be a little below the center up and down. In order to secure an even impression on a platen press the printing surface should be in the exact impressional center.



Showing arrangement of furniture and quoins in a form.

After the furniture and quoins are properly placed, tighten the quoins with the fingers and work your hand over the face of the form to straighten up any lines that may not be exactly on their feet. When the form is pressed together fairly

tight in this manner, plane it down carefully — don't hammer it down. Then tighten up the quoins with the key, beginning with the quoin at the foot of the page, No. 1; then tighten No. 3, and No. 2 next. Do not tighten up quoins with great force at the first twist of the key; go over them several times, tightening each a little at a time. Do not lock up the form tighter than is necessary to make it firm; to twist the quoins with such force as to make the form and furniture spring up from the stone will make it difficult to get an even impression later, with liability to slur, as well as to cause spaces, quads, and other blanks to work up on the press during the run.

Do not place a metal quoin next to the iron chase; if it must come close to the chase, put in a piece of reglet, or at least a strip of card. Also, in every case when possible, put a piece of reglet between the quoins and furniture, either wood or metal. This will save the furniture from injurious indentations made by the pressure of the quoins.

Stop Cylinder — A style of printing machine in which the cylinder stops after making the impression, and remains stationary during the return of the flat bed containing the form; then starts again with the sheet for the next impression. See *Cylinder Press*.

Stops — The punctuation marks: full stop, the period. This use of the word is rare.

Straight Matter — Plain composition, in ordinary paragraph form, as distinguished from display, or that set in special arrangement.

Stroker — An English trade name for a pressman's bone or metal feeder, or folder.

Stud-horse — Large, black type display, such as used for auction bills, horse sales, etc.; Something bolder and bigger than normal in newspapers and other work where small type is customary.

Stuffer—A slip of printed advertising matter, convenient to go into ordinary envelopes and be sent with regular business correspondence or to accompany special advertising matter through the mails. Envelope stuffers are used in this way to take advantage of the full weight permitted by the postal rates. Although usually a slip of paper, a stuffer may be a card, folder, or small booklet, so that it does not call for additional postage on account of extra weight.

Style of the Office — In order to maintain some consistency of practice in the multitude of details of composition, many printing offices have rules, more or less variable, concerning spelling, compounding, divisions, use of capitals, small capitals, italics, headings, paragraphing, and other matters in which it is desired to pre-

serve as much uniformity as practicable. A style-card or style-book may be prepared for this purpose, or for a certain publication, or a particular kind of work.

Stylus — A sharp pointed instrument for writing, for scratching on a surface covered with a film of wax or similar substance, or for writing on carbon manifold sheets.

Sub.— Abbreviation for substitute; a workman who takes the place of another for a short time.

Sub-head — A secondary heading or title; usually put in type smaller or less prominent than main heading. It may be in a line by itself, or at the beginning of a paragraph, as a side-head.

Subscriber — One who contributes to an enterprise, or pays for a book, magazine, or newspaper for a stated term.

Subscription Books — Those sold directly to patrons by arrangement with the publishers or their agents — usually book agents who go from house to house; as distinguished from books on sale at usual stores.

Super Royal — A size of writing paper larger than royal, 20 x 28 inches. A size of platen press, 15 x 21 inches, is sometimes termed a half super royal.

Supercalendered—When paper has been given an extra smooth finish or glaze in the calender rolls during manufacture it is said to be supercalendered. See *S. & S. C.*

Superfine — A term denoting extra good quality in paper, card, or other material.

Superior Letters, or Figures. — Small letters cast on the upper part of the body, $^{2\ 3\ 4}$ for references, etc. Those cast below the line are inferiors. Briefly, superiors.

Supplement — An extra sheet or addition to a newspaper, magazine, or other publication. It may be a picture, a pamphlet, or a broadside, and be uniform with or entirely different from the regular publication.

Surfaced Paper or Card — That which is treated with a coating, either white or colored, and highly polished; coated paper.

Swash Letters—Italic capitals with little flourishes which fill up the gaps made by the inclination of the letters, etc. They are often furnished as extra characters for several kinds of italic, and are best used for occasional places only; when used profusely or indiscriminately their decorative effect is easily spoiled.

Syllable — A part of a word, which may be spoken by one effort of the voice; it may be represented by one letter (a vowel) or by a number of letters. In type-setting, the division of words at the ends of lines is made between two syllables, never properly in the middle of a syllable.

Sympathetic Ink—See *Invisible Ink.*

TABLE — An orderly arrangement of topics, with figures in two or more vertical columns; a list, an index, a collection of headings or numbers, a catalogue, a syllabus, a synopsis, etc.

Table of Contents — A list or summary of the chapters, with titles, subjects, and page numbers, placed in the front of a book. See *Index*.

Table Work — Lists of items arranged in columns, which are sometimes separated by blank spaces and sometimes divided by light ruled lines. Composition of this kind requires more care than straight matter, on account of the nicety of justification needed to keep the columns in true alignment and to make the page lock up solidly.

Tacky — Said of the condition of a printing roller when it has the right degree of stickiness to take up and carry ink.

Tail — The bottom of a page.

Tail-piece — A small cut or ornament at the end of a chapter; the decorative design at the bottom of a page. There are many stock designs available, mostly in the style of an inverted pyramid. See *Head-piece*.

Take — When copy is divided among several compositors, each part is a take.

Take In — To thin space a line in order to get in a syllable or word. To drive out is to wide space and put the syllable or word into the next line.

Tall Copy — A specially good copy of an edition. In the early days of printing the sheets of paper, being made by hand, varied more or less in size; often there were differences of an inch or more in the same lot. When the sheets for a book were gathered, those with wide margins and which matched the best were selected for choice copies: some books were tall, some wide, and others had very scant margins. Hence, any specially made book at a high price.

Tarcolin—A proprietary name for a washing fluid for type forms, etc.

Technique, or Technic — The principles and practice of a craft or manual art.

Telegraph — In newspaper parlance, news or other matter transmitted by telegraph; copy of this nature furnished to the compositor, usually on thin sheets of paper.

Terminology — The peculiar words, or technical terms, with their explanations, used in a science, art, or trade.

Ternion—An old-time bookish term for three four-page sheets set into each other. A quaternion is four sheets and quinternion five sheets thus arranged. In the early days of printing, books could be printed in forms of one or two pages only, because of the small, rude presses. As a collection of single folded sheets sewed side by side does not make a strong binding, it was the custom to arrange the pages so that a num-

ber of sheets nested in each other, like the signature of later times, and these sections were then more strongly sewed. This method of printing booklets and pamphlets has always been in vogue, but the term is now obsolete.

Text — The body matter of a page or of a book, as distinguished from titles, headings, notes, extracts, references, indexes, and other auxiliary matter. The word text is also used to describe the Old English or black letter style of type, probably from the fact that the text of the first books was printed in black letter. These two different meanings of the word often lead to confusion, as "text letter" may mean any kind of type used for the body of a page, or it may mean a display line set in a black letter. It would seem that the term in the latter signification may well be discarded.

Thick Leads — Those over 2-point; thin leads are usually understood as those less than 2-point, the 2-point being the normal or common lead. See *Leads*.

Thick Space — The 3-to-em of any body; 4-to-em, 5-to-em, etc., are thin spaces.

Thirty, or "30" — When a telegraphic news dispatch is received, its completion is indicated by the number 30. Hence, in a newspaper composing room, when thirty is in it is a signal to close the forms and go to press.

Thirty-twomo — A sheet folded in thirty-two leaves, making a small size book, about 3⅛ x 4¾ inches; 32mo.

Three-color Printing — The process of reproducing a picture or drawing in many colors photo-mechanically with three separate printing plates, each plate being used for a different color—that is, one of the three primary colors, red, yellow, or blue. The process begins with making three photographic negatives of the copy, focused exactly alike. Each of these negatives reproduces one of the three color values of the picture. These three colors — yellow, red, blue — are chosen because their mixture in varying proportions will reproduce all the other colors of the spectrum, with little loss to their real values. In making these negatives colored screens or filters are used between the negative and the copy. For the yellow negative a color filter is used to shut out the yellow rays and allow only the red and blue rays to pass through. For the red negative the filter admits only the blue and yellow rays, and for the blue negative only the yellow and red rays. On these negatives the colors filtered out form the transparent part of the negative, just as black is the transparent part of an ordinary photographic negative. Halftone plates are then made from these negatives by the usual process. The yellow plate is printed first, then the red, and

the blue last. As a result of printing these colors one over another, the engraved surface of each plate taking on its different parts just the right amount of its color to combine with the others, the picture is produced in its original colors. The process has been developed within the past thirty years, the first plates having been made by Mr. Frederick Ives of Philadelphia, about 1880. Much skill is needed in making the plates, and they require more or less manipulation in etching different parts in order to produce correct color values. Expert skill is required also in the printing of three-color plates, in order to produce good results — just the right color and quantity of ink, just the right impression, and absolutely exact register. See *Quadri-color.*

Three-line Letter—A large initial letter at the beginning of a paragraph, the depth of three lines of the text.

Throwing Quads — To play at dice with quads; jeffing.

Throw-off — A lever attachment on a press by which the relative positions of the form and platen can be slightly changed while the press is running, so that no impression is made. See *Impression Throw-off.*

Thorne Type-Setting Machine — See *Simplex Type-Setter.*

Thumbnail Cut — Any small cut, of a sketchy style, such as may be used on the margin of a page, etc.

Ticket — A small piece of printed card or strong paper. Tickets are used for a multitude of purposes and form a staple item in all offices doing small job work. The great bulk of ticket printing is, however, specialty work, done, for the most part, with special machines. In the case of street car tickets, railroad tickets, theater tickets, and the like, there are requirements of slitting, perforating, serial and consecutive numbering, etc., in addition to the wording or design of the ticket itself. In many cases safety devices, which make them difficult to duplicate or counterfeit, are necessary, and the method of manufacture must be well guarded against theft.

Tilde — The small curve on the top of the Spanish n ~. See *Spanish N.*

Time Ticket — A slip or memo. upon which a workman records the time spent on a given piece of work, or a number of jobs. Each department of a printing house has a specially prepared blank for this purpose, and the filling out of records of this kind is now required of all workmen, in order to ascertain the proper charges.

Time Work — That which is paid for by the hour, day, or week, in distinction from piece work.

Tin Printing—Printing on tin is done by an off-set process. The impression is made first from a relief-plate or litho stone on to a rubber-covered cylinder, and from this cylinder the impression is transferred to the tin sheet. The rubber takes a clear impression from the original, and its elastic surface gives a smooth and true impression on the hard, uneven tin surface. The work is a specialty and is done on specially built presses.

Tin-plate Printing — The use of zinc and aluminum instead of stone for lithographic printing is sometimes so called.

Tint—A degree of any color lighter than normal, as when white is added; when the color is darkened by adding black it is a shade.

Tint Block — An engraved, grained, or flat plate or electro for printing a faint color, either as a background or to fill panels or other parts in a design.

Tissue — A thin sheet of paper used to cover the face of an engraving or plate in the better class of books. It is made of special qualities for this purpose.

Title Letter — A roman face, of capitals and figures only, slightly heavier than ordinary book letter, originally designed for title pages, headings, etc. Any type face specially designed for titles and headings.

Title Page — The page at the beginning of a book which describes the work, usually with the author's name, publisher's imprint, date of issue, etc.

Title Sheet — The first signature or sheet of a book, which contains the title page and other front matter.

Token — Half a ream of paper. The term is going out of use. Formerly a token was 240 sheets, but of late years paper has been made 500 sheets to the ream, and a token is one half of that.

Tooling — To re-engrave or touch up parts of an engraving with a hand tool; to embellish a book cover by means of small hand tools.

Toned Paper — A lightly tinted paper of any color.

Top Sheet — The outside sheet in the preparation of a tympan or cylinder packing; it usually covers the overlays and other make-ready. Also called draw sheet.

Transo Envelope — A trade name for an envelope having on its face a transparent panel through which a written or printed address on the sheet inside may be seen. Also called outlook envelope.

Transfer — To take an impression of a form, plate, or drawing and transfer it mechanically to another plate or flat surface. This

is done in various ways for many different purposes in printing. The simplest method of transferring an impression is to take a proof of the original on a sheet of smooth paper of good quality, and, while the ink is still moist, lay it face down on the plate or surface upon which it is desired to be transferred. Then place this under pressure, as on a hand-press, with sufficient force to make the ink adhere to the plate. This is a convenient method when it is desired to make a tint block or color plate for a job. The electro foundries and supply houses furnish blank metal plates for the purpose. When the transfer impression is thoroughly dry, the plate is cut out or engraved, according to the necessities of the design. The plate is first mounted on a block, like an electro.

When it is desired to transfer a print or drawing on which the ink is dry, the back of the print is moistened with benzine, or a solution of lye, or some fluid which will soften the ink enough to permit it to offset on the new surface. Sometimes the transfer may be made by rubbing the back of the sheet with a burnisher, instead of by mechanical pressure. Several methods of printing are based on the transfer or offset principle. See *Rubber Offset Press*, *Wall-Paper Printing*. A process of transferring to glass, china, marble, etc., by which the design is made to adhere to the

new surface while the paper is dissolved and washed away, thus leaving all the ink or paint of the original, is called decalcomania.

Transfer Ink — A special ink used in lithographic work; sometimes called *tusche*. It is usually a compound of lampblack, shellac, wax, soap, tallow, etc.

Transfer Paper — A paper specially finished, upon which designs are printed or drawn in transfer ink, to be transferred to a lithographic stone or metal plate. Also a carbon sheet or similarly prepared paper.

Transpose—To change a letter, word, phrase, etc., from one place to another, as marked on copy or proof; the abbreviation *tr.* is marked on the margin. See *Proof Reader's Marks*.

Treadle — A foot lever by which a machine may be operated.

Triple Case — A type case divided into three sections, instead of two like the common cap. case, each having the boxes for holding a font of capitals; used for fonts of lining gothics and similar fonts of capitals, as well as for special characters, accents, fractions, signs, etc.

Triangular Quads — These are useful sometimes when it is necessary to justify matter beside a diagonal rule or border, or for holding a word or line in a form at an angle.

Tri-chromatic Printing—Three-color printing.

Tub-sized—Said of paper that has been sized by passing through a tub or vat. See *Size*.

Turned Commas [‘‘] — Used at the beginning of quotations; apostrophes are used at the end. Turned commas are often used to signify ditto in catalogue tables and other places where a repetition of the words of a top line are deemed unnecessary, thus:

6-point roman type, per lb. 64 cts.
7 “ “ “ “ 56 “
8 “ “ “ “ 52 “

Turn for Sorts — When a letter runs short, or there is none in the case, and it will be provided later, another letter of the same thickness is placed in the line face downward, thus: t▄rned. It is the rule in all composing rooms, when a letter has been taken from a live page to be put in another, there should be a turned type inserted to show the absence of the proper letter.

Turps—Abbreviation for turpentine; a word common in British printing houses, where turpentine is used to wash type, cuts, etc.

Turtle — A section of the surface of a large cylinder on the old-time type-revolving press. Newspaper pages were made up on these curved surfaces, the columns running laterally along the cylinder surface. Column rules were thin at the bottom and

thick at the top, allowing a slight curvature from column to column across the page. The bottoms of the column rules extended beyond the face and the ends were fastened in the frame-work of the turtle; this, together with firm lock-up at the foot of each column, kept the type in place during its revolutions in printing. See *Type-Revolving Press.*

Turtle Plate—A curved stereotype or electroplate to fit the cylinder of a rotary press.

Tweezers — Small spring nippers for occasional use to pick up type, etc. The handiest thing ever invented for injuring type. An apprentice who thinks tweezers are better than his fingers to pick up type and correct on the galley should be forbidden to use tweezers except under supervision; when they are needed, he should be shown their proper use and carefulness insisted upon.

Twelvemo—A sheet folded into twelve leaves, the leaf being about 5 x 7 ½ inches; a duodecimo; written also 12mo. A form for printing a sheet of this kind is termed a form of twelves — twelve pages on one side and twelve on the other.

Twenty-fourmo—A sheet folded into twenty-four leaves; written 24mo.

Two-third Case — A type case two thirds the width of the regular size; usually to fit special cabinets.

Two-line Letter — An initial or letter covering two lines of the text matter. It should be observed that a letter on a body twice the size of the text is not always two-line on its face; the real two-line, three-line, etc., has a large face and relatively little shoulder.

Two-thirder — A workman who is not a full fledged journeyman; an advanced apprentice, to whom is paid about two thirds of a journeyman's wage.

Tying Up — To bind together a page of composed type with a string. This is one of the first things the apprentice should learn to do, and he should learn to do it properly. It is not a difficult trick, after a little practice, and probably no other detail of a compositor's work exhibits his habit of carefulness or carelessness. When the page is completed on the galley, hold one end of the string on the exposed corner (the end of the last line), about half way down on the shank of the type. Then wind the string around the top of the page and down the lower side, till it reaches the starting point; here cross it over the first turn and wind around again, two, three, four, or more times around the page, according to the strength of the string and the size of the page. Each turn of the string should cross the first turn at the corner, so as to bind it. With the left hand this corner of the page should be held

securely, while the string is drawn around firmly and evenly, but not too tight. When enough turns of the string are around the page, a loop is formed and pushed in behind the string and the type, just around one corner; this loop is then draw up tightly at the corner, so that it will hold. The string should be about at the middle of the shank of the type all around the page, and care should be exercised to prevent a loose end from getting under the type when proof is pulled.

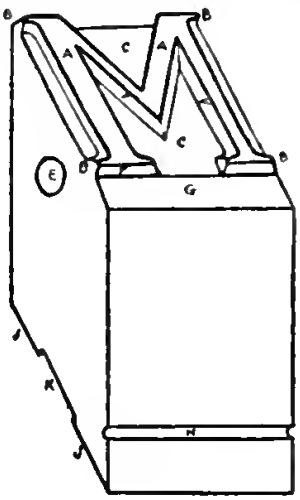
Tympan — The sheets of paper, card, cloth, or other material, that cover the platen or cylinder of a press, and on which the paper is placed to receive the impression; also a cloth-covered frame attached to the bed of a hand press. On a cylinder press this feature is usually termed the packing. A soft tympan, consisting of six or seven sheets of common book paper and two or more sheets of soft card or blotter, is used for cheap work of ordinary grades, as it will readily cushion itself to any unequal heights of the printing form and requires less make-ready than a hard tympan. A soft tympan will, however, usually wear down the form quicker than a hard tympan that has a careful make-ready. A hard tympan will consist of three or four sheets of smooth book paper and a sheet of hard bristol or pressboard. When the tympan is hard the make-ready should be done

with care, cutting out the high parts and underlaying or overlaying the low places, to make the impression as even as possible all over the printing surface. The top sheet of a tympan should be strong enough to stretch tightly over the under sheets, to hold gauges firmly, and to withstand the rubbing and handling it may receive during the run. For short runs of small forms, up to two thousand impressions, a top sheet of common book paper will usually stand the wear, but for long runs the top sheet should be of good manila or other smooth, strong paper. The style of the press and its condition, as well as the kind of work to be done, will require many variations, often very slight, in the character of the tympan; these details can only be learned by experience and observation, but carefulness and forethought are indispensable to avoid poor results.

Tympalyn — A trade name for a specially prepared cylinder and platen covering. It is a composition of small wire springs and rubber cloth, made in thick sheets and fastened under the top or draw sheet.

Type — Printers' types are small pieces of metal, each having a letter or other character in relief on one end. They are made of many sizes, but all must be of exactly the same length, so that when they are assembled in lines and pages their faces

shall present a uniform plane surface to be printed from. The character which each type is intended to print is called its face. As there must always be more or less white space around the letter, this face does not occupy all the body, or shank, but is placed so that the printed character will be in its proper position beside its mates of the same font. Other features of a cast metal type are named and explained in the diagram. The groove between the feet of the type is made by breaking off the jet which remains when it is cast. On large sizes the pin-mark often has figures denoting the size in points; sometimes it may have a letter or device signifying the foundry where it was made. The utility of types depends upon their absolute accuracy, and the squareness of each type and of any number of them in any combination. They must be not only exactly uniform as to height of face, but their bodies must be so made that when they are assembled in lines and pages by the compositor hundreds or thousands of them may be locked



A A, the face
B B, the serifs
C C, the counter
E, the pin-mark
F F, the beard
G, the shoulder
H, the nick
J J, the feet
K, the grove

together by pressure at the sides in a perfectly compact mass, and none be loose and fall out. A type that is cast longer or shorter than its mates is high-to-paper or low-to-paper. A type that is low will print faintly or will not show at all; one that is high will be unduly forced into the sheet. Types are made from an alloy of lead, tin, antimony, and sometimes copper — a composition which, when melted, fills the mould exactly and shrinks very slightly in cooling, leaving a smooth, close-grained surface that is durable enough to give many impressions without breaking down. Hard metal is important, yet it must not be so brittle that types will break when dropped or fine lines snap off when exposed to pressure. Small types are commonly of harder metal than large types. Other materials used with type — leads, slugs, and the backing of electroplates — have a larger proportion of lead and are softer. Large types for show-cards and posters are made of wood of various kinds. See *Wood Type*.

Type High—The height of type in America is .918 of an inch. Electros, engravings, and other forms to be printed on a typographic press should conform to the type-high standard. Type-high gauges, useful articles in any composing or press room, are made in a number of styles.

Type Founding—The casting or manufacture of printing type. For a long time after the invention of typography, type founding, printing, and binding were included in the general term of printing; printers cast their own types and printed and bound the books. Type founding became a distinct vocation early in the seventeenth century.

Two chief things are required to cast a type—a mould, in which the body is cast; and a matrix, which faces one side of the mould and has in it a depressed image of the letter to be cast. The mould is made in two movable sections, which are fitted together in such a manner as to close up before the cast is made and then open sufficiently to release the type after casting. It is made of fine steel and requires skilled work. Owing to the high temperature to which it is subjected, every piece of steel (a mould usually is made of twelve or fifteen pieces) must be carefully hardened and tempered, and allowance must be made for expansion and contraction of its parts in such a manner as not to affect the accuracy of the type which is cast in it. Absolute accuracy in every part is vitally important. Each piece is carefully ground to a velvety smoothness and the parts of each section fastened solidly by means of steel screws. The weight of a mould varies from one to three pounds, according to the

size of type to be made in it. The matrix covers an opening at one side of the mould, and on the opposite side (which is the foot of the type) is an opening through which the melted metal is injected. To insure a solid body and clear, sharp face, this opening, or jet-hole, must be in right proportion to the size of the type to be cast. A type mould is made for a single size of body, but is made adjustable sideways to correspond to the different widths of letters of a font. One mould may be used to cast all the characters of a font, or of any number of fonts of the same size body, by simply changing matrices for the faces. Each mould must be not only true for the type-body it is to cast, but it must agree exactly with every other mould for the same size of body, because, in a large foundry, a number of moulds may be used for casting one size of type.

As the matrix is the pattern of the face to be cast, it will be seen that it is the really important item in modern type-founding. Type-faces are many, and every week new ones are appearing. With the production of each new letter or character a new matrix is required, and every-day use of popular faces injures or destroys many others. Matrices are made by different methods. The older method is by cutting the letter on the end of a small bar of soft steel, which is hardened when the letter has been

perfected, and is then used to stamp into a bar of copper. This *strike*, as it is called, is the matrix in the rough. When it is smoothed down around the sunken impression, with its sides trued up and finished, it is ready to be placed into the mould. This method of making matrices has been the one commonly employed for standard faces of body type in large demand, as, after the steel punch is made, it is the quickest way of producing a matrix.

The electrotype method consists, first, in securing a perfect pattern of the letter. This pattern may be engraved by hand or by mechanical means, or it may be a perfect type-face already cast. A brass plate (1½ to 2½ inches long, ¼ to 1½ inches wide, and ¼ inch thick) with a square hole near one end, is then provided, and the pattern letter so fitted in this opening that it will have some open space around its face. A number of these brass plates, with their pattern letters, are then arranged and fastened side by side in a *flask*. This flask is next entirely covered over with wax, except at the square openings in the brass plates. These openings, containing the faces of the pattern letters, are thus exposed, and the flask is then hung on a rod in an electro battery. Here the copper, held in solution of minute particles, is deposited on the exposed portions of the flask until it forms a thick shell and

fills up the spaces between the sides of the square and the patterns. In a few days (often weeks, according to the size of the matrix), the flask is taken out, the wax removed, and the pattern letter withdrawn from its copper bed, leaving a perfect image in copper securely fitted in the brass plate. This brass plate is now an unfinished matrix, and requires to be smoothed off on all sides, reinforced by another brass strip riveted on its back, and finally fitted for the mould.

The third method of making a matrix is with a matrix-cutting machine, invented by Mr. L. B. Benton and used by the American Type Founders Company. In the upper part of this machine is placed a bar of metal composition — the future matrix. Above this, pointing downward at the proper position, is a rapidly revolving hardened steel needle which cuts the design in the matrix. The cutting needle is held in the center of a finely adjusted, movable steel frame. This frame, with its revolving needle-point, is controlled in all its motions, horizontally and laterally, by a rod suspended below; by moving the lower end of this rod with the hand over a given diagram all its motions are duplicated on a much smaller scale by the cutting needle above. It will thus be seen that the thing necessary to produce any design in a matrix is a pattern to be placed on the

lower shelf of the machine, under the point of the suspended rod. One pattern may be used to cut matrices for several different sizes of the same letter by simply adjusting the machine to the size desired. All these operations in producing a matrix are mechanical, and may be done quickly and economically.

There are several things about a type matrix which require skill and accuracy on the part of expert workmen. The outer surface must be in exact parallel with the face of the sunken letter, so that the face may be absolutely level on the top of the type-body. All the matrices of a font, and of all fonts cast in the same mould, must be of the same depth from the surface to the sunken face. The matrix must be fitted so that it leaves the face standing exactly upright, with proper shoulder on each side, and on true line with other letters in the font. Knowing that the matrix-fitter, as well as the mould-maker, divides an inch into ten thousand parts and uses delicate measuring instruments which detect the difference between one of these parts and two of them, it may be realized what painstaking precision and minute calculations are needed to make a finished matrix.

Casting the type. The matrix and mould being completed, they are then attached to the casting machine. This consists, primarily, of a pot, in which the type metal is

kept heated to a fluid state over a small gas furnace. Above and in the center of this metal pot is a rod with a spring attachment, which at each operation of the machine acts as a plunger to force a small stream of hot metal through a side aperture into the jet-hole of the mould. After the casting, the two parts of the mould separate slightly, the matrix is drawn away from the face of the type, and the cast is moved out; then the mould and matrix close together again and the operation is repeated. Cold water or air is circulated around the mould to keep an even temperature and prevent overheating. The matrix for one character only is placed in the machine, and when enough type has been cast, it is taken out and replaced by another, the change requiring but a few moments.

There are several kinds of type-casting machines in use, such as hand, steam, and automatic. The older machine is the hand caster, which is operated by a small wheel with a handle attached. This is now used for small fonts of large types, and for casting sorts. Large type cannot be cast as fast as small sizes; the mould must remain closed longer for the metal to cool, it must open wider to eject the cast, and the whole operation generally is more deliberate.

Steam casters are operated by mechanical power (originally steam power, thus called steam casters) and, being faster, they are

used for casting the smaller sizes of type. When type is cast by the hand machines it is still unfinished, as the piece of metal called the jet, which cooled in the opening of the mould, still adheres to the bottom of the type. This jet is broken off, the types are set in long lines, and fastened in a grooved channel, face down. A small plane smooths away the irregular surface caused by breaking off the jet, leaving a shallow groove on the bottom. The types also have slight burs and sharp edges which must be rubbed off before they are ready for inspection and the font-room. Type cast on the older styles of steam machines also required the jet to be broken off afterward; on the later machines this was done by a little device on the machine, though the final finishing of the type is done afterwards by other operations.

These operations, when type comes from machines of the kind just described, are done mostly by hand, with the aid of a polishing stone or a small dressing wheel.

On the automatic casting machine, which is the modern method of casting type, the breaking of the jet, dressing, etc., are all accomplished automatically on the machine, the types coming out in a continuous line practically ready for the compositor. Small sizes of type may be cast on these modern machines as fast as one hundred in a minute.

Type-High Planer—An instrument for planing off the bottoms of electro bases and other printing blocks, to bring them to the exact height of type.

Type Holder—A small tool for holding a few lines of type, for hand stamping; such as used by book binders for lettering book covers, etc.

Type Lice—Just ask any real live printer's apprentice!

Type Measure—A strip of strong cardboard, wood, or steel, having its edges marked with scales indicating ems of type sizes; usually only sizes up to pica or 12-point are given. For measuring composition.

Type Metal—See *Type*.

Type-Revolving Press—A machine in which movable type, locked up on turtles, was fastened to a large cylinder and this set in motion to make an impression on another cylinder on which the paper was held. Between 1847 and 1860 the great newspapers of the world were printed from types. The making of stereotypes had not then been introduced, and there was no method of duplicating forms except by the laborious process of setting by hand; and although the cylinder press was a great advance on the hand press, the single-cylinder machine was not fast enough for the rapidly increasing circulation of news-

papers. By fastening the type on a huge cylinder and then arranging around it four, six, eight, or ten small impression-cylinders, with ink-rollers, each revolution of the large cylinder, with its type form, produced a corresponding number of copies. In this manner large editions were printed quickly, but the method was cumbersome and the machine occupied a great deal of room. The invention of the web press, with its curved stereotypes and roll of long paper, soon displaced it. See *Turtle.*

Type-Setting Machine—An apparatus for composing type mechanically, instead of by hand. The term is loosely applied to all machines which produce composed reading matter. The Simplex machine (see *Simplex Type-Setter*) is a type-setting and type-distributing apparatus; the Monotype (see *Lanston Monotype*) casts individual types and composes them in justified lines; the Linotype (see *Mergenthaler Linotype*) assembles matrices at the side of a mould and casts the complete line in one piece, or slug. The first patent for a type-setting machine was filed in 1822, by William Church of Boston, who was at that time in England, where the patent was filed. Since then various other persons have studied the problem of substituting machinery for human hands in type-setting, and many machines have been invented, and discarded as impracticable.

There was little difficulty in making an apparatus that would set the type; the problems of justifying the lines and distribution seemed to be the chief obstacles. In the Simplex, setting and distributing are successfully done, but the justification of lines is done by hand work.

Typewriter—A desk machine for writing with type by the touch of an operator's fingers on a keyboard.

Typewriter Type — Made to imitate the work of typewriting machines. Its peculiarity is that every character and space is the same width, and every line will contain the same number of pieces. The printing of imitation typewriter letters is a specialized line of work in many shops and results are produced in various ways. The ribbon-face effect may be produced by using a special stipple-faced type as shown here,

Ribbon-face Typewriter

or with ordinary type faces by interposing a sheet of fine muslin between the form and the sheet to be printed.

Typographer — A printer; specifically, one who prints from movable types. Often abbreviated to *typo*.

Typographia — Relating to typography and kindred subjects. This word has been used as a title for books pertaining to printing and as the name of a society of printers.

Typography — The art or process of printing from movable types. It is the method by which the greater part of the world's printing is done. It has great advantage over other methods because of the cheapness of its materials, for the rapidity with which it may be adapted to many different forms, for the ease with which ink may be applied to the printing surface, and for the relatively little force needed to make an impression. Also called letter-press printing.

Typographic Numbering Machine—For use on typographic presses, either separately or in connection with type-high forms, as distinguished from hand and other styles of automatic numbering machines. See *Numbering Machines.*

Typographical Union — See *Unions.*

Typogravure—A trade name given by a firm of French picture publishers to a special kind of copper relief-plate halftone pictures.

Typometry—A method of setting maps or diagrams with movable types. See *Map Type.*

Typothetae —A society of master printers or employing printers. This name was first given by the Emperor of Germany to the printers of that country about 1465. He "permitted printers to wear gold and silver, and both the typographi and typothetae were honored by him with the privi-

lege of bearing coats-of-arms and wearing armor." The word typothetae signifies type placers and is from the Greek. Its use in this country is due to Peter C. Baker of New York, who discovered it in some old works on printing and suggested it as an appropriate title for a society of master printers in 1863. He did not know its classical pronunciation, but gave it the same accent as the word hy-poth'e-sis, and it is pronounced this way by members of the societies now existing. Greek scholars say that it should be pronounced ty-po-the'te. The name was applied only to the New York society until the summer of 1887, when similar societies were formed in St. Louis and Chicago. Since then many other bodies have been organized bearing this name, as well as an international body including master printers in the United States and Canada, having the title of the United Typothetae. It is a voluntary association to advance the interests of its membership and to bring about improved conditions in the printing industry. A brief summary will give an idea of the scope of its objects: (1) Education of printers in matters of cost of production; (2) education of printers in benefits of organization; (3) encouragement of more friendly relations and of greater confidence between printers; (4) promotion of trade schools for the education of printers; (5) installa-

tion, under the supervision of experts, of scientific cost-finding systems; (6) maintenance of credit bureaus; (7) standardization of printing-plants; (8) suggesting plans for the rearrangement of workrooms for greater economy of time; (9) establishment of satisfactory trade relations with those from whom equipment and supplies are purchased; (10) standardization of shop practices; (11) promotion of mutual fire-insurance companies; (12) education of printers in the principles of scientific management; (13) maintenance of free employment bureaus; (14) education of managers and men in matters of efficiency. It is sometimes assumed that because the Typothetae is composed of employing printers, it was formed to attack the unions of journeymen and even to destroy them. This is not the fact, however, although the two organizations have disagreed a number of times on matters of wage-scales, hours of work, etc., and on the question of the "open" or "closed" shop.

The United Typothetae is composed of delegates from the local societies, and holds conventions once a year in different cities. For a number of years it has been especially active in promoting its objects throughout the country and has greatly increased its membership and influence. The headquarters of the organization are in Philadelphia.

U — U and V were for a long time merely different forms of the same letter, like I and J; the V being originally the form used in Roman capitals and the U or u the cursive or pen-written form. It is comparatively recent that the two forms have been used to express different sounds. Language-makers and printers of the sixteenth and seventeenth centuries realized the confusion made by the use of one form to represent several sounds of speech, and began to use the forms V and U to represent separate sounds, as we use them now. This modern distinction between the letters explains their location out of the usual alphabetic order in the printer's cap. case.

Ultramarine — A beautiful and durable sky-blue color, made from the mineral *lapis lazuli*. Artificial ultramarine of commerce is made by grinding together and burning a mixture of clay, carbonate of soda, sulphur, rosin, etc. Used in making printing inks. Same as *azure*.

Uncials — A style of pen-written letters in early Latin manuscripts. They were a combination of the old capitals and the newer minuscule or small letters, in use before small letters had been developed into the easier-made forms which they finally assumed and are now familiar. These uncial letters were in many quaint forms, which sometimes are copied by designers and let-

terers of the present day. Probably so named because the letters were all of one size and drawn between horizontal lines an inch apart; *uncial*, Lat. Inch.

Uncut — Referring to the leaves of a book or pamphlet, means that they have not been trimmed; when the bolts or folds have not been cut, as with a paper knife, they are *unopened.*

Underlay — A piece of paper, cardboard, or other substance placed on the bottom of a form, to bring it up to proper height for printing. Underlays are necessary when the face of a worn type, ornament, rule, or cut is not as high as the true level of the form. A weak place in a form may be given more impression by an overlay on the tympan, but if the part is very low it should be brought up by an underlay in order that it may get its proper inking when the rollers pass over. Underlays, as well as overlays, should be attached in position with the smallest quantity of paste that will keep them in place. Care should be observed to place an underlay exactly and only on the part that is to be brought up; to let it touch an adjoining letter or rule that is already high enough will seldom remedy the defect, as the relative height of the two parts will still be the same, and while the low part is brought up to the required height, the adjoining part may be too high. In case of

cuts or other blocks that are not mounted with care, it is well to test them before the form goes to press and have them made the right height. This can easily be done by placing the cut on the imposing stone between two large types and then laying a straightedge or brass rule across their face to note if the cut is low or high. A soft wood base, even if it seems the right height in the form, may need an extra underlay when it gets on the press and is subjected to the necessary pressure for printing. When a large cut or plate is hollow in the center, it may be taken off the base and an underlay placed on the back of the plate itself and the plate fastened on the base again. See *Overlay.*

Underscore, Underline — To draw, or print one or more lines beneath letters or words, as for emphasis, thus: UNDERSCORED or OVERSCORED.

Uneven Page — The odd-number page or folio, 1, 3, 5, etc., as distinguished from the even page, 2, 4, etc. See *Odd Folios.*

Unions — Societies of journeymen printers and others in the same line of work, organized in many cities. The compositor's society is known as the International Typographical Union, having its headquarters in Indianapolis. The present society dates from 1869, having been preceded by the National Typographical Union, organized

in 1852, and that again by the Printers' National Union, beginning in 1850. It is the oldest and one of the strongest trades-unions in America. A typographical society existed in New York in the year 1795, answering some of the purposes of a union, and in 1800 it prepared a scale of prices. It died out before 1805, and the New York Typographical Society, then a trades-union, succeeded it in 1809. Philadelphia had a society in 1802, Washington in 1814, and Boston and Albany very early; but these societies, although having the same objects, did not appoint delegates to a central body. The International Typographical Union, representing mainly journeymen compositors and composing-room workers, is composed of delegates from local unions throughout the United States and Canada, and meets once each year in some important city. While the management of internal affairs, such as establishing wage scales, membership dues, chapel regulations, apprentice conditions, etc., is left mostly to local unions, the international body has control of many important policies of the association. Traveling cards are issued to members who wish to go from the jurisdiction of one local union to another, and they are subject to local regulations and privileges. It maintains a home for aged members at Colorado Springs, Colorado, one of the best institutions of its kind.

Workers in pressrooms are organized in the International Printing Pressmen and Assistants' Union, which has local unions throughout the country.

Closely affiliated with these unions in the larger cities are those of the allied trades, such as pressmen, feeders, stereotypers, electrotypers, engravers, binders, etc., and in the more important centers of the industry these interests are joined in allied printing trades councils.

Unit — A given standard of measurement; thus, the point is the unit of measure for type sizes; pica (12 points), the unit of measure for type lines, pages, length of leads, brass rule, size of wood and metal furniture, etc.

Unitype — See *Simplex Type-Setter*.

Unit Type Cabinet—An arrangement similar to the sectional book cases. Unit type cabinets are built in sections about 12½ inches high, holding eight or ten cases. There is a base piece upon which it rests and a cap piece on top. Any number of the sections may be put together to provide room for additional fonts as needed. These cabinets also have cases of different depths to provide for fonts of different sizes: very shallow cases for job fonts of small type, and other cases of various depths, some being extra deep, to give room for large fonts.

Universal Base—A style of metal base, made in one piece or in sections which may be placed together, and upon which electros, stereos, and other plates may be mounted type-high for printing; interchangeable base. See *Sectional Block*.

Universal Press—A style of platen job press originally invented by Merritt Gally of New York, about 1869. It differs from the Gordon, Golding, and Prouty styles of platen job presses in several features; its frame is more compact and strong, and is not so high from the floor; the bed is stationary in a perpendicular position, and the impression is given by the movement of the platen drawn by two strong side-arms at an exact right angle to the bed. It has distinctive inking apparatus, which, together with its strength, makes it well adapted for work requiring good ink distribution and a heavy impression. Because of its strength it is much used for embossing work. There are two makes of this style of press, one known as the Gally Universal and the other the Colt's Armory (or John Thomson), and both are made in several sizes, ranging from 10x15 inches to 14 x 22 inches inside chase, for printing. Other styles and larger sizes of these machines are made especially for embossing, stamping, creasing and cutting, printing on wood, and for other purposes.

Unlock—To loosen up a form by turning or moving the quoins.

Unsized Paper—See *Size.*

Upper Case—The capital case.

Upright Mitering Machine—For shaving rules, etc. It is operated by moving the knife up and down with a lever; in distinction from the rotary style machine.

Upright Page—One that measures less sideways than it does up and down; the usual shape of book page, as distinguished from the oblong page, which is wider than its height.

V—This is the older form of the character U, and for a long time was used as an equivalent to it. This form is still sometimes used for U in old-style printing and lettering, as in titles, tablets, inscriptions, etc., where it is desired to give classical, old-style effect. There seems to be little reason for using it for U in modern printing. As a Roman numeral V stands for five or 5. See *U.*

Vandercook Press—A style of proof presses that have lately been introduced to the trade. They embody the use of a cylindrical surface which is rolled over the form, and are designed to give a strong, uniform impression, and may be operated quickly.

Varnish—An oily liquid used in mixing printing inks. It is made in many grades of quality and consistency, the finer kinds being made of linseed oil, and rosin oils used for the cheaper grades. Reducing varnish is used to thin out ink; gloss varnish will give a glossy effect when it dries after printing. See *Printing Inks.*

Vegetable Parchment — A specially prepared paper, resembling parchment, made waterproof and greaseproof, partially transparent, and strong; used for wrappers and coverings, for food jars and similar purposes. See *Parchment.*

Vellum — A kind of paper made from the skins of calves, of finer quality than parchment. In the trade genuine vellum is called classic vellum, to distinguish it from imitation or paper vellum, which is made from high-class rags that have been specially treated. Used for bindings and for fine special editions and documents. See *Parchment.*

Vellum Finish — Paper or cardboard made with a surface that looks and feels like vellum; the smooth, natural surface of a finely prepared leather.

Vermilion—A beautiful red color, toning to orange, used as the proper accompaniment for black ink. Vermilion pigment is the sulphid of metallic mercury, and as sulphur

and copper react strongly on each other, when ink of this kind is used for printing with electrotypes there is liable to be unsatisfactory results, especially on long runs; the color will become dark, and the copper face eaten away. Type forms or nickel-faced plates will obviate this trouble. Vermilion is also made from the cochineal insect — a sort of worm-dye.

Versicle—The sign ℣ used in religious work.

Verso—The left-hand page of a book; back or reverse side of a book cover. See *Recto*.

Vibrator — An extra roller, placed between two form rollers on a press. It rests against the form rollers and turns with them, but has a lateral motion, vibrating back and forth slightly, so as to give additional distribution of ink while the form rollers are moving over the printing surface.

Vignette — Before the day of halftones the term vignette was applied to little woodcuts that precede the title-page or were used to embellish initials, and as chapter heads and tail pieces not enclosed within a definite border. These cuts contained garlands, festoons, trailing vines, etc., hence the name vignette. A decorative or illustrative tail piece. The term is now generally applied to halftone plates finished so that the background screen fades away gradually and merges into the surface on which the print is made.

Volume — Originally a roll of parchment or papyrus; a book; a collection of leaves, numbers, or parts bound together to make a book.

W — This is one of the newer additions to the alphabet, having been introduced in the eleventh century. The first form of this letter was two V's, thus VV (double u), V being the original shape of the letter we now call U. See *U* and *V*.

Wall-Paper Printing — Like other classes of printing, this was formerly done by hand methods, either by the use of engraved blocks or by stencils. Some special kinds are still produced in this way. Common wall-paper is now printed on large cylinder machines, in much the same way that daily newspapers are printed. The real printing, however, must be preceded by an operation which applies the tint or "ground" on the surface of the paper. This is done by running the web through a series of brushes which lay the moist ground upon which the design is to be printed. This moistening of the paper requires a special drying process, which carries it in extended fashion for long distances over a series of steam-heated pipes. The heat dries the paper rapidly as it is carried along, and it is then re-wound loosely in rolls or run directly into the printing machine.

The printing surface is a large cylinder, on which the paper is carried to receive the various colors of the design. By the side of this large cylinder are small cylinders on which the engraved blocks or plates, or other printing surfaces, are mounted, each small cylinder having an inking apparatus for the particular color which it is to print. The cylinders are adjusted and geared so as to revolve and print one color after another, in accurate register, upon the paper as it passes around the large cylinder, each revolution of which produces a given length of paper printed in several colors.

Wall-paper is also printed by the offset or transfer method. In this process the large impression cylinder has a transfer composition blanket. The small printing cylinders, which are geared around the large one, each printing a single color, leave their impressions, not on the paper, but on the composition blanket. As the main cylinder revolves it receives in turn the various colors of the design. An extra impression cylinder, also adjusted close to the main cylinder, carries the sheet of paper to receive this composite color impression: that is, printing all the colors on the paper simultaneously at one impression. The advantages of this latter method are claimed to be a pleasing softness in color effect, exact register, greater speed, and less

wear on the printing blocks or surfaces because of the composition surface on which they leave their impression.

The colors used for wall-paper are more like paste than the stiff typographic inks, and they contain more or less glue or a similar sticky substance. The work has many special processes applied to the production of different kinds of goods.

Wash Drawing—A drawing made in sepia, india ink, or transparent colors, in which the colors are washed lightly and evenly over the surface, as with a brush; used for architectural drawings, machinery, industrial designs, etc. A style of picture adapted for reproduction by halftone engraving process.

Washington Hand Press—A common style of iron press, much used for pulling proofs and similar work. Its general structure and operation is similar to that of the old wooden hand press, but its simple mechanical principle and great strength of impression, imparted by a simple arrangement of knuckle-joint and levers, make it a most effective machine. It has been made by several firms, and probably will always be a staple item of general printing-room equipment.

Waste Sheets—The extra sheets, trial sheets, or spoiled stock used in making ready a form on the press, in binding, etc.

Water-mark—The faintly marked figure, letter, or design in the fabric of a paper, usually not noticeable except when the sheet is held up to the light. The water-mark in a sheet of paper is formed while in a state of pulp, when a raised design or pattern made of thin wire worked into the required shape is fastened upon the surface of the wire which forms the mould. The layer of fibres over every portion of the design is thinner than the surrounding layer which forms on the surface of the mould in the ordinary way, and the design appears as a transparent pattern in the dry paper. The water-marks used by early paper makers have given names to several sizes of paper, like foolscap, pot (English), crown, post, elephant. The use of water-marks has greatly increased in recent years, as it is equivalent to a trade-mark for papers of known quality, and a ready means of identification.

Wave Rule—Brass rule having a face like this :

Waver Roller—An inking roller which distributes ink on a table or on other rollers by moving back and forth endways in addition to its rotary movement. On some styles of cylinder presses it is placed diagonally on the ink table, the action of the table giving the vibratory motion. A vibrating roller.

Wax Engraving — A common method for making printing plates for maps, charts, diagrams, and other classes of work. It is less expensive than other methods of engraving, and may be done quickly. A polished plate of copper or brass is covered with a thin film of specially prepared wax, and upon this the design may be made either by photography, hand drawing, or other transfer method. The engraving of the wax surface is done by sharp-pointed tools, a ruling machine, or, in the case of lettering, ordinary types are pressed in the warm wax, one letter or one word at a time. In this manner the wax-covered plate becomes a mould, the blank spaces are "built up" in the same way as an electrotype wax mould, and it is then put in a copper bath and a copper shell deposited on its face. A printing plate is made by the same general procedure as with an ordinary electrotype.

Wayzgoose — An old-time printer's festival. It is described by Joseph Moxon (1683): "It is customary for all the journeymen to make every year new paper windows, whether the old will serve or not, because that day they make them the master printer gives them a wayzgoose; that is, he makes them a good feast, and not only entertains them at his own house, but besides, gives them money to spend at the

ale-house or tavern at night; and to this feast they invite the corrector, founder, smith, joyner, and ink-maker, who all of them severally (except the corrector) open their purse-strings and add their benevolence. These wayzgooses are always kept about Bartholomew-tide, and till the master printer have given this wayzgoose the journeymen do not use to work by candle light." Wayzgoose, literally, a young stubble goose, a dainty dish for a feast.

Web Press — A printing machine which is automatically supplied with paper from a great roll or web; usually a rotary machine, but there are flat-bed presses in which the same method of supplying paper is used.

Wetter Numbering Machine— A popular style of typographic numbering machine invented by Joseph Wetter of New York. It is made in several varieties and adapted to many uses for automatically numbering tickets, coupons, certificates, and other work. See *Numbering Machine.*

Wetting Down Paper — Within the past fifty years the practice of dampening paper before it is printed has been gradually abandoned in this country, although the practice is said to be still in vogue to some extent in Europe and elsewhere. The use of dampened paper was necessary in early days of printing because of crude methods

and materials; type was not all cast of uniform height and it was used longer and worn more; presses were not made so powerful and make-ready was not done so carefully. Slightly dampened paper will take ink more readily than dry paper, and it does not require so much force to make the impression on the softened surface. The impression makes a thicker line, of course, and the impress will show strongly on the back of the sheet; but these were necessary results because of the rudimentary methods and materials employed. The dampening also takes the gloss off the surface of the paper, and although dry-pressing and hot-pressing would smooth out more or less of the roughness made by the impression, it is a tedious and expensive operation. Printing damp paper is a slow process, as the stock for a given job must be first wet down and allowed to stand for several hours (usually over night) in order that the moisture may saturate the pile evenly; the damp sheets cannot be handled as readily as the dry sheets, and when printed they must be allowed some time to dry. The development of power presses with their true and steady impressional motion, better inking apparatus, finer printing surfaces, and better finished paper, as well as greater care and skill in the preparation of tympans, have made wetting down an unnecessary operation for the

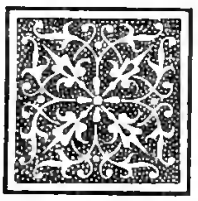
great bulk of commercial and book printing. In newspaper work the dampening of paper is practiced to some extent, especially in places where old equipment and old-time methods are still in vogue. There are occasional instances, also, in which dampened paper is used for small editions of choice books printed in old-style fashion on hand-made paper.

Weather Signals, Wind Indicators — These are cast in type, for use in weather reports, etc. (The apprentice should study the type foundry specimen books to become familiar with the numerous special signs and miscellaneous characters cast in type.)

White-face Letters, Figures — Those which are made to show white on a dark ground. See *Outline Letters.*

White Line — A line of quads; a blank line.

White-line Engraving — A cut or engraving in which the design appears in white lines on solid or dark ground.



White Out — To open out, or put blank space between lines, when more than ordinary leads are required.

White Page — A blank page.

Whole Fraction — One that is cast complete on one body, in distinction from a piece fraction. See *Fractions.*

Wickersham Quoin—A small metal device for tightening up forms in a chase, etc. It consists of a metal box, 2 inches long, by 5/8 inch deep, and 3/4 inch in width when closed. The quoin is made of two pieces held together at the ends by small springs. Enclosed in the centre of the box is a circular cam, fitted into grooves in the sides. An opening in the top of the quoin admits a square key which fits into a square hole in the cam. The turning of this cam expands the sides of the quoin, so that when placed between the side-stick or furniture and the enclosing chase, its expansion presses the whole mass together solidly. See *Morton Lock-up*.

Wide Measure—Lines of type that are longer than normal, in relation to the size of type used; a length of line that would be normal for 12-point type would be wide measure for 6-point. Lines averaging over twelve words each may be termed wide measure.

Wide Spacing—More than the normal space, or three-to-em, between words in a line. Good practice spaces solid and thin-leaded matter with the three-to-em and thinner; double-leaded matter and wide type-faces require wider spacing. A safe general rule is that the average space between words in a line should be less than the white space between the lines of a paragraph. Very wide spacing is a defect in straight matter.

Wire-mark—The faint mark left on paper by certain wires in the mould during manufacture, as in laid paper. See *Water-mark.*

Wire Stitcher—A machine for fastening the leaves of a pamphlet by means of small wire staples. The wire is supplied from a spool, and is guided into a channel in which it is cut into the required length and formed into a staple. This staple is made just beneath a piece of mechanism which, by the action of a foot-trip, drives the staple down through the sheets. After going through the sheets the two points are bent toward each other and pressed flat against the under side. All the motions of the machine are automatic, and it may be adjusted to stitch a thin pamphlet of a few sheets or a pamphlet three-quarters of an inch or more in thickness.

Woodburytype—A style of photo-gravure. See *Photo-gravure.*

Wood Base—A block of wood upon which an electro, zinc plate, or halftone plate is mounted type-high. Wood bases usually suffice for small plates for short runs, but for heavy plates and many impressions solid metal bases are preferred. See *Universal Base.*

Wood Engraver—One who engraves or cuts pictures or designs on wood blocks for printing.

Woodcut — An engraving on wood, or a print from such an engraving.

Woodcut Paper — A soft paper of fine fiber and smooth finish, lightly sized or unsized, which readily takes an impression of ink. Also termed plate paper.

Wood Engraving— The art of cutting designs in relief upon a polished block of wood. A print made from a block of this kind. For good work boxwood is usually employed, and the engraving is done on the end of the grain. When the surface of the block is smoothed it is treated to a very light coating of chalk-wash, in order that the drawing or design may be held on it while the cutting is being done. The design may be drawn with pencil or india ink, or transferred by photography. By means of fine tools, gravers, gouges, tint-tools and chisels of different kinds, the white parts are cut away, leaving the design in raised lines or dots on the surface. Woodcuts will print well on all grades of paper, even with ordinary inks; they can be engraved finely to give soft and delicate effects, or they can be made in strong lines and masses of color. The lines being cut deep, there is less liability to fill up in printing, and electros can be made as good as the original. Electros are always advisable for woodcuts, the original being preserved for further plates or in case of accident to the printing form.

Wood Pulp—Wood pulp is of two distinct classes, "mechanical" and "chemical." The mechanical or "ground wood" pulp is made by taking logs which have been sawed into convenient lengths, removing the bark and feeding them into a machine where they are ground to atoms by contact with a rapidly-revolving grindstone over which water is flowing. The pulp is then screened in order to eliminate splinters or chips, and is formed into sheets on a wet press machine. This product is of low quality, as it contains all the resinous and gummy portions of the original wood, and the fibers are short and inflexible. The chemical pulp is made by chipping the logs, and cooking the chips in large digestors with strong liquors at a high temperature. After a sufficient time the digestors are emptied, and the pulp is then washed, screened, and bleached, and formed into sheets by a machine closely resembling a paper machine. This process dissolves the resinous and gummy matters, and leaves the cellulose fibers in a practically pure state. These fibers are much better than the "ground wood," as they are freed from substances which soon decay, and are longer, stronger, and more flexible. There are several different kinds of chemical wood pulps, varying in character according to the kinds of wood used and the processes of cooking employed. The two most

common are known as "soda pulp" and "sulphite pulp."

Mechanical pulp and chemical pulp are often used together, the quality of paper depending on the proportion of low grade and better pulp; chemical pulp is also mixed with rag pulp for better grades of paper.

Wood Pulp Board—Coarse, stiff card made from wood pulp, used for making boxes, cheap book covers, etc.

Wood Type—Large types, such as are used for posters and large bills, are made of wood. The smallest size for practical use is 48-point, or 4-line pica. Sizes of wood type are multiples of the pica, and are so named, as 8-line, 10-line, etc. They are much cheaper than metal types, though not as durable or satisfactory for printing. The wood commonly used is maple and the letter is made on the end of the grain. It must be well seasoned and polished. The manner of cutting the letter is by routing away the blank parts with a small rapidly-revolving cutter. The strip of wood, cut to the height of the size required and planed type-high, is placed in a machine equipped with a pantograph apparatus. A pattern letter is put in place, and over this a guide point is moved; on another part of the machine is the revolving cutting tool; as the guide point is moved over the pattern, its mo-

tions are duplicated by the block under the cutter, which cuts away the wood. When the letters on a block are thus routed out, they are sawed apart, the finishing touches given, and the letters oiled. Pine and other soft woods are used for very large sizes of wood type and poster cuts.

Wood Furniture—Pieces of wood of various sizes, for fitting around forms, between pages, etc. See *Furniture.*

Wood Rule, Border, etc.—Large sizes of rules, borders, ornaments, and similar material, are made of wood for posters, large cards, etc. Same as wood type.

Work-and-turn—When all the pages on a sheet are imposed on one form, the paper is turned and printed on the second side, making two copies when cut. See *Half Sheet, Sheetwise.*

Worked Off—When the required amount of sheets have been printed the form is said to be worked off.

Workers—The set of electros used for printing a work, in distinction from the pattern plates or moulders—those held in reserve for moulding duplicates, or for other use.

Wove Paper—Paper made on a mould in which the wires are woven together like the threads of ordinary cloth, and which does not show distinct wire marks, as on

laid paper. Most paper is now made on this kind of a mould, especially paper used in printing, as the wire marks of laid paper are liable to show in printing solid or flat surfaces. See *Laid Paper*.

Writings—General term for writing paper of all grades. The cheaper grades are made mostly of wood pulp, the better grades from cotton rags, and the finest grades from linen rags. Writing papers are sized, and do not take printing ink as readily as unsized book or print paper; they require a stiffer, stronger ink and more impression.

Wrong-font—A wrong letter or character in a line, caused by mixing fonts of type; in proof, written *wf*.

Xylography—The art or process of engraving on wood.

Yankee Job Stick—A style of compositor's stick in common use. The movable knee is held to the back-plate by a small steel clamp and a thumbscrew. Its popularity for jobbing is largly due to the ease with which it can be changed from one measure to another. The sticks in use before its advent required a screwdriver or similar tool to fasten or to unloose the movable knee.

Year Book—A book or pamphlet published once a year, in which a record of events, statistics, and other information relating to some work or subject is put in convenient form for reference.

Ye—The *y* in this old-time word and also in y^{m}, y^{n}, y^{s}, and y^{t}, is a corrupt representation of the Anglo-Saxon ꝥ, or *th*, introduced at the time when the Anglo-Saxon alphabet was superseded by the Old English or Black Letter, in which ꝥ (y) bore a considerable resemblance in form to ꝥ.

Zinc Etching—A relief printing plate made on zinc by photo-chemical operations. See *Process Engraving*.

Zinc Galleys—Those with zinc bottoms; now little used except for mail lists and other standing matter. Brass is now commonly used.

Zinc Halftone—The cheaper, coarse screen halftones, such as are used by newspapers, are etched on zinc instead of copper, the latter being used for finer work.

Zincograph—An etching on zinc.

Names and Proportions of Regular Book Folds

Name of folding	Modern size of leaf	Size of printed sheet	No. of pages on sheet	Old size (folds of 19 x 24)
Folio	12 × 18	18 × 24	4	12 × 19
Quarto (4to)	9 × 12	18 × 24	8	9½ × 12
Octavo (8vo)	6 × 9	24 × 36	16	6 × 9½
12mo	5⅛ × 7⅝	30½ × 41	32	4¾ × 8
16mo	4½ × 6¾	27 × 36	32	4¾ × 6
18mo	4 × 6	24 × 32	32	4 × 6⅓
24mo	3⅝ × 5½	22 × 29	32	4 × 4¾
32mo	3⅛ × 4¾	19 × 25	32	3 × 4¾
36mo	3 × 4½	18 × 24	32	3⅙ × 4
48mo	2¼ × 4	18 × 24	48	2⅜ × 4

How Books Are Bound

BOOKBINDING includes all the processes necessary to fasten the leaves of a book and put them into a cover, after the paper has been made and the printing done. The details of the work varies more or less according to the character of the product — whether literary and historical works, novels, school text books, blank books, pamphlets, catalogues, notebooks, diaries, etc. These and other classes of books may be bound in many different ways, as in leather, cloth, boards, or paper, in either stiff or flexible covers.

When the printing has been done on a large sheet, the sheet is folded over and over until in length and width it is the size of one leaf. This folded sheet is the unit of a book, and each book is made up of a number of these units, a book being large or small according to the size of the page and the number of units used. In large binderies much of the folding is done by machines with automatic feeders. In addition to these there are machines which are fed by hand, the sheets being taken one by one from a pile and placed into the machines as rapidly as they can be taken up and folded. In the smaller binderies, most of the folding is done by hand. Some hand folding is also done in binderies where folding machines are used. This is necessary in case of special folds, of errors which sometime occur in machine folding, and in case the necessary folds are too small for the machines.

As a number of copies of a book are made at one time, there are many duplicates of each signature when the folding is done. These duplicates are

collected into separate piles, and the piles arranged in order of the page numbers. One signature is then taken in order from the top of each pile to form the individual book. This process is called *gathering*. In some of the larger binderies gathering is done by machines, but where these are not used the work is done by hand, the signatures of each complete book being collected in order from one pile after another.

After the collection of signatures is made, they are examined to see that no error has occurred in the order of pages and that no signature is missing. This is *collating*.

When the signatures have been gathered and collated they must be sewed together. In the larger binderies this sewing is done by machines, but in smaller binderies the sewing is done by hand.

The remaining processes are *forwarding* and *finishing*. Forwarding includes trimming the edges of the leaves; rounding the back previous to putting the book into its cover, *backing* or *jointing* it all along each side of this rounded back to allow for the bending of the cover, re-enforcing the back with cloth and paper; and, in some books, putting on the cloth head-bands at the top and bottom of the back. Forwarding also includes the making of covers and fastening them on the books. Covers are fastened to books commonly by one of two methods; in the *case* book the sewing which holds the signatures together has no connection with the cover; in the *laced in* book the signatures are sewed to pieces of twine or *bands* across the back, and the ends of these bands are fastened to the cover boards. The latter is, as will be noted, the most durable, but the former method, being cheaper, is employed for ordinary books.

Finishing means placing the title, designs, ornamentation, etc., on the cover. Sometimes these are stamped by machine and sometimes *tooled* by hand.

Many other details of book binding are briefly described in the following glossary of technical terms.

TERMS USED IN BOOK BINDING

All-along — In sewing a book, when the thread is passed from kettle-stitch to kettle-stitch, or from end to end in each sheet, it is sewed all-along.

Antique — See *Blind Tooling*.

Azuré Tools — Used in binding, where the heavy and wide marks, instead of being a solid mass, are made with horizontal lines.

Backing — The process which makes the back of the book ready to set into the cover. It may be done with a hammer, the book being held by clamps; or by placing the book in a backing-and-rounding machine operated by hand or by other power which turns over the back edges toward the sides of the book.

Bands—The cords on which the sheets of a volume are sewed. When "sewed flexible," the bands show on the back of the book; when bands are let in the back by sawing grooves, narrow strips of leather are glued across the back to look like raised bands.

Band Driver and Nippers — Tools used in forwarding, to correct irregularities in the bands of flexible backs.

Bastard Title — The brief title on a leaf preceding the main title; sometimes termed the half title.

Binder — A temporary cover for periodicals and pamphlets, usually arranged so that it may be taken off and attached to subsequent copies of a publication. A book-binder.

Binder's Waste — A kind of paper made for lining or end papers.

Bindery — A book-binding establishment.

Blank Books — A large variety of books which are bound with blank leaves, or leaves having ruled lines and little or no printing: account books, memorandum books, ledgers, etc.

Bleed — When the margins of a book or pad of printed sheets have been trimmed so as to cut into the printing, they are said to bleed.

Blind Tooling or Stamping — Impressions of finisher's tools or book-dies without ink or gold leaf. Sometimes called *antique*.

Blocking Press — A stamping press for impressing blocks or dies on covers.

Boards — Applied generally to many kinds of heavy cardboard. A book with stiff sides covered with paper of any color is bound in paper boards.

Board Papers — The part of the end papers pasted on the board covers.

Bolt—The uncut fold in the head, fore edge, or tail of a book sheet.

Book Cloth — Used for covers; is made by special processes and in many grades and patterns.

Book-marker —A slip of card, paper, ribbon, or other material to place between the pages of a book, for a reader's or owner's convenience.

Book Plate — A printed label, made in plain or elaborate design, to indicate the ownership of a volume. *Ex-libris*.

Bosses — Brasses or other metal ornaments fastened upon the boards of books.

Brochure (pronounced *broshur'*) —A small pamphlet having the sheets simply sewed; a booklet.

Broken Over — When plates (illustrations on separate sheets inserted in a book) are turned over and folded a little from the back edge, before they are put into place, to make them lay flat and turn easily, they are said to be broken over.

Buckram—A kind of thick cloth finished like linen, possessing good wearing quality.

Bulk—The thickness of a book, without the cover. Some papers bulk more than others for a given number of leaves—that is, make a thicker book.

Bundling—Pressing together the signatures of gathered books and tying them in bundles, to make them solid as possible, and for convenience in handling.

Burnished Edges— Those which have been gilded or colored and polished smoothly. Burnished edges of a book may be dusted and kept cleaner than rough or ordinarily-trimmed edges.

Cancels— Leaves containing errors which are to be cut out and replaced with corrected pages.

Caps— Paper coverings used to protect its edges while the book is being covered and finished. Also the leather covering of head-bands.

Case— The cover of a cloth-bound book.

Case Binding— When the cases or covers are made separately and afterward fastened on the backs of the books.

Circuit Edges— Bibles and prayer-books are sometimes bound with projecting covers turned over to protect the edges; divinity edges.

Clasp— A hook or catch for fastening the covers of a book together, usually at the fore edge.

Cloth Boards— Stiff cloth covers.

Collating— Examining the signatures after a book is gathered, to see that they are in correct order.

Colophon—A note, inscription, or emblematic device relating to the printing or binding of a book; old-time term for the printer's imprint at the end of the work.

Contents, Table of— See p. 38.

Corners— Pieces of leather or other material pasted upon the corners of a book in half binding.

Cropped — When a book has been trimmed down too much.

Crushed Levant — Levant morocco leather with the grain crushed down to give a smooth surface.

Deckle-edge — See p. 49.

De Luxe Edition — A book made with high-grade material and more than the usual care and expense.

Dedication — An address prefixed to a book or other literary work, inscribed to a friend or patron as a mark of respect or affection.

Dentelle—A fine tooled border resembling lace-work.

Divinity Edges — Same as circuit edges.

Doublé— The ornamented inside of the cover of a book, made with tooled leather, silk, or other material. Also termed *doublure.*

Drop Folio — A page number at the bottom of a page.

Dummy — Pages of a book or other composition made up to show the general form and style of the completed work. See p. 56.

Duodecimo—Sheet folded into twelve leaves ; 12mo. See p. 57.

Edge-rolled — When the edges of a cover are lined or ornamented, blind or in color, with a roll, or finishing tool.

Edition Work — When books are bound in large numbers, as distinguished from single books or jobbing.

Embossed — When a plate is stamped upon a sheet or cover so as to produce a raised figure or design.

End Papers — The paper placed at the front and back of a bound book ; one sheet is pasted to the cover, the other to the next white sheet, unless it is specially made paper. End papers are often of ornamental patterns and special or significant designs. The fly-leaves.

Extra Binding—A trade term for books sewed and bound by hand in superior manner.

Extra Cloth — Used for popular bindings, in plain finish and a variety of patterns; the cloth is well covered with color, concealing the weave and giving a solid color effect.

Fanfare — A style of binding in which there is great profusion and repetition of flowers, foliage, and other small ornaments.

Fillet — A cylindrical instrument upon which simple lines are engraved, used in finishing.

Finishing — The part of a binder's work which consists in lettering and ornamenting the cover. The workman doing this is a *finisher*.

Flexible — When a book is sewed on raised bands and the sewing thread passed entirely around each band. A term applied also to the covers of a book, as for example, *full flexible* or entirely *limp*; or *semi-flexible*, when a thin board or heavy paper is used in making the cover.

Fly-leaves — The blank white leaves at the beginning and end of a book.

Foil — A special product, neither gold leaf nor ink, used in stamping book covers.

Folder — See p. 76.

Folio — A sheet folded into two leaves. See p. 77.

Fore Edge — The side of a book opposite the back.

Format — The size, shape, proportions, and appearance of a book or other work.

Forwarding — The operation of binding after the book is sewed, until it is put in its cover and ready for finishing.

French Finish — Bindings having upon them bands only, with no tooling; clear leather simply titled in gilt.

Front Matter — Preliminary matter. See p. 204.

Full Binding— When sides and back of a book are entirely covered with leather.

Full Gilt — When the edges of the leaves of a book are gilded on head, fore edge, and tail.

Gathering — Collecting the folded sheets of a book according to the order of the signatures. See p. 87.

Goffered Edges — An indented decorative design on the edges of a book ; an old fashion in book binding, applied to gilt or silvered edges.

Glair —The white of eggs, beaten up ; used as a size to hold gold leaf in book binding.

Gilt — Applied to ornamental work on covers and also to the edges of a book ; in the latter case, chiefly used for the top.

Guards — Strips of paper inserted in the back margin of a book, intended for pasting plates on, and to prevent the book being uneven when closed with the plates inserted.

Guarded Signatures — Folded sections of a book which have strips of cambric pasted around the outside back edge, to strengthen the paper and binding; sometimes done on the first and last signatures of a book because of the extra strain on these sections.

Guinea Edge — Rolled with a pattern similar to the edge of an old guinea coin.

Half Binding—When a book is covered with leather on the back and corners, and the sides covered with cloth or paper : half morocco, half russia, half calf, etc.

Half Title — See p. 95.

Hand Letters—Types made usually of brass, so that they may be heated, and affixed singly to handles, for lettering covers, etc.

Head and Tail — Top and bottom of a book.

Head-band—The ornamental pieces of silk or cotton at top and bottom of the back of a book, to give finish.

Hub — A thick band on the back of a blank book.

In Boards — When a book is cut after the boards are in place to form the sides, it is cut in boards. When cut before the boards are affixed it is *out of boards* with projecting covers. Most books are bound in the latter manner.

Inlay — A panel of cloth, paper, or leather set into a book cover flush with the surface.

Inset—A sheet placed inside of another, both being folded. The outer sheet is an *outset*.

Jacket — The paper wrapper, printed or unprinted, folded around a new book to protect the cover.

Joints — The part of the cover where it joins the back on the inside; the hinge.

Keratol — A waterproof cloth made in imitation of leather; sometimes used for book covers. Similar to leatherette, buffinette, etc.

Kettle-stitch — The stitch made at the head and tail of a book; a chain stitch; a catch stitch.

Laced In — When the cover is fastened on a book by means of the bands being passed through holes in the boards, they are laced in.

Law Binding — A plain style of leather binding used for law books. *Law Calf* — Binding in calf leather that is uncolored, in the natural state, pale brown.

Leatherette — Cloth or paper imitation of leather, sometimes used for covers.

Levant Morocco — Morocco leather made from the skin of the Levant goat, which has a larger grain than Turkish morocco. See *Morocco*.

Limp — Leather or cloth bindings which are flexible and bend easily, in distinction from boards or stiff covers.

Lining Papers — Colored or marbled papers inside the covers; end papers.

Make-up — The plan of a book or other work, showing the order of pages, engravings, etc. See p. 147.

Marbled Calf — Calfskin made to resemble marble by chemical treatment.

Marbling — A process of decorating sheets of paper and edges of books with variegated colors in irregular patterns.

Mill-board — A thick, very heavy card, used for book covers.

Mitred — When the lines of a design meet at a right angle without over-running each other; joints of leather or cloth at an angle of 45 degrees, as when turned over on the inside of the covers.

Morocco — A fine leather prepared commonly from goat-skin, but an inferior kind is made of sheep-skin, and tanned with sumac, and dyed in various colors; said to have been first made by the Moors. Genuine morocco makes the most durable binding for books.

Octavo — A sheet folded into eight leaves. See p. 165.

Out of Boards — See *In Boards.*

Out Page — The first or signature page of a sheet.

Outset — See *Inset.*

Oversheets — Signatures or sheets left over after complete copies are gathered and bound.

Paste-down — The part of the fly-leaf sheet that is pasted on to the cover of a book.

Pieced — When space between bands, where lettering or title is placed, has a piece of leather different from the back, it is said to be pieced or titled.

Plate — Any full-page illustration printed on paper different than the book is termed a plate.

Points—Small holes made in the sheet when printed, as guides for registering and folding. See p. 195.

Publisher's Binding — Commonly understood as ordinary cloth binding.

Quarter Binding — Leather or cloth back with paper board sides.

Quarto — A sheet folded into four leaves. See p. 236.

Recto — The right-hand page of a book.

Register — The ribbon placed in a book as a marker. A list of signatures at the end of early-printed books for use of the binder. See p. 242.

Roll — A small wheel attached to a handle, the edge of the wheel having a decorative pattern. It is used for ornamenting book covers.

Rounding — See *Backing*.

Running Head or Title — The title of a book or subject at the top of the page and repeated from page to page.

Russia Leather —Used for book bindings. The genuine leather is made in Russia, and is commonly brownish red in color, although it is sometimes made in black, dark blue, and green. An imitation of this, known as American russia or imitation russia, is made of cowhide, a thick, strong leather with a slight grain, so closely resembling the genuine that the difference can be detected only by the characteristic odor of the Russian product. The latter is said to be tanned with willow bark, dyed with sandal wood, and soaked with birch oil.

Saddle-stitch — See p. 258.

Sawed In —When the signatures of a book are ready for sewing, a number of slight grooves are sawed across the back; into these grooves are placed the cords on which the sewing threads are turned.

Section — The leaves that are folded together to make one piece for gathering; it may be a single folded sheet, or two sheets, one of which is set into the other. A signature.

Set-off — A transfer of color to the opposite page. See p. 166.

Shelf-back — The back of the book, showing the title, bands, decorations, etc.

Signature — See p. 269.

Sixteenmo — A sheet folded into sixteen leaves; 16mo.

Slips — The pieces of twine that project from the back of a sewed but uncovered book. They can be slipped up or down, and are fastened to the covers.

Smashing—Pressing together folded signatures so that the folds will lay flat. This may be done with a flat-headed hammer or mallet, or on a smashing machine. See *Bundling*.

Spring Back — A cover that is not fastened entirely on the back of the book, but will show a hollow space when the book is opened; in distinction from tight back.

Start — When the leaves of a bound book break away from the sewing threads, they are said to start.

Super—A cotton cloth resembling cheesecloth, glued and starched, and glued to the back of the sewed signatures, to hold the book and cover together.

Tapes — Short strips of tape or cloth placed across the back of a book and fastened to the boards to strengthen the binding.

T.E.G. or t.e.g. — Top edge gilt.

Three Quarter Binding —Leather back and corners, with paper or cloth sides.

Thumb Index, Thumb Guides — The notches ranged in order down the fore edge of dictionaries and other reference books.

Tight Back — When the cover of a book is fastened solidly to the back, and does not open out hollow when the book is opened.

Tipped On — When a print or other sheet is mounted on a larger sheet by simply pasting down one edge. The French word *volant* is sometimes used.

Title — The space between the bands on the back of a book, upon which the title is lettered.

Tooling —To make designs or ornaments on a book cover by means of small hand tools, either with gold or colors, or plain. See *Blind Tooling*.

Top Cover — The front cover of a book.

Uncut — When the edges of a book have not been trimmed. When the bolts of an uncut book have not been cut, it is unopened.

Verso — The left-hand page of a book ; the back or reverse side of the cover.

Whip-stitching — When the leaves of a book have no fold at the back, they are sewed together in sections, the stitches on the back of each section being close together and extended from top to bottom. This is called whip-stitching. The sections are then sewed together like the sections of a book having folded leaves.

White Edges — Simply cut, without being gilded or colored.

Wired — When the sheets of a pamphlet are fastened with wire stitches or staples. This is done on wire-stitching machines. See p. 347.

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